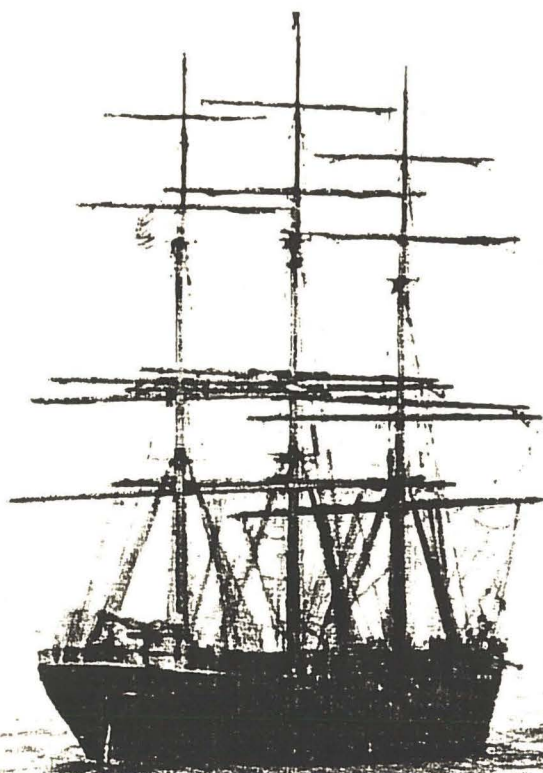
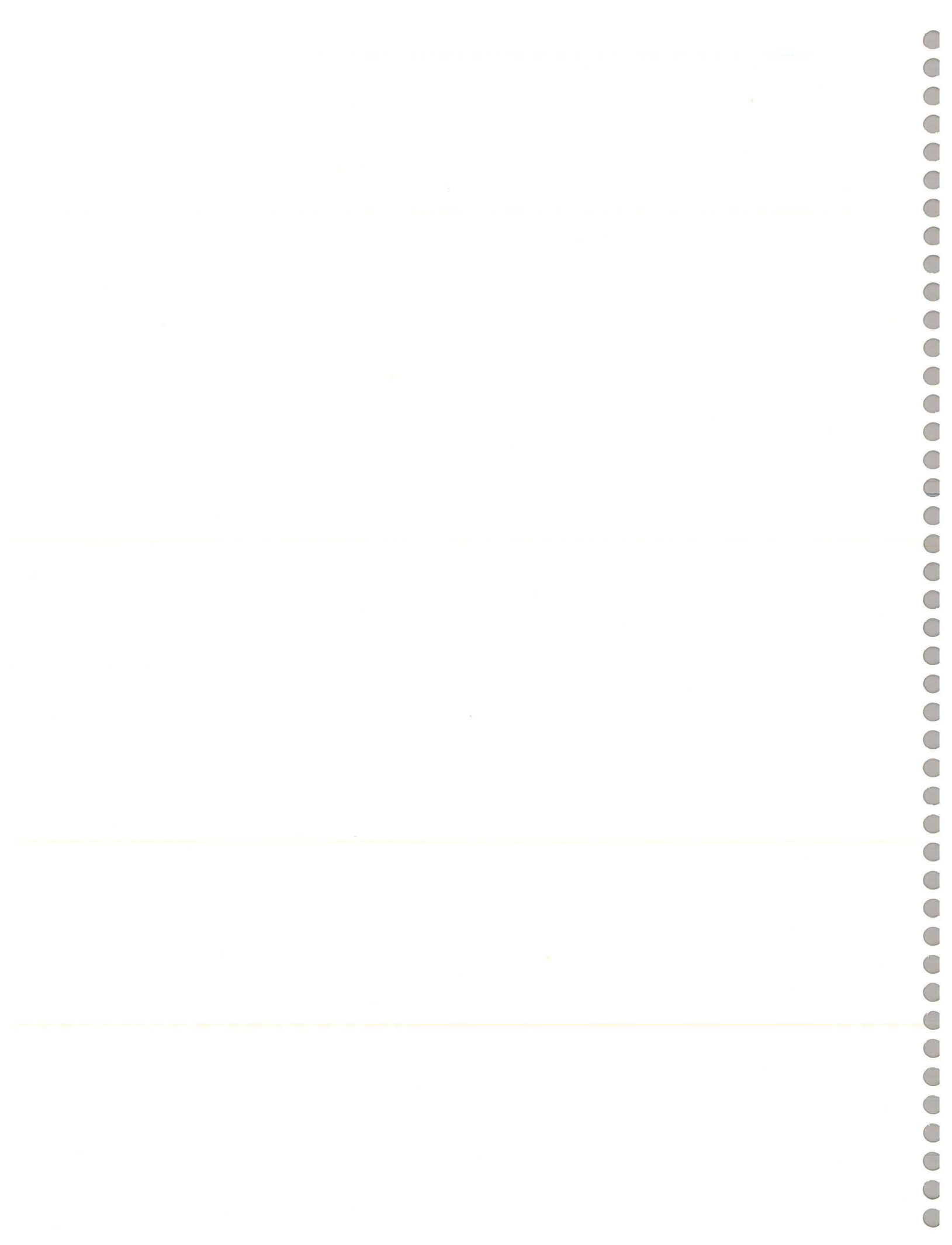


**THE NATIONAL MARITIME MUSEUM ASSOCIATION**  
**Balclutha Deck Renewal Project**

DAILY LOG



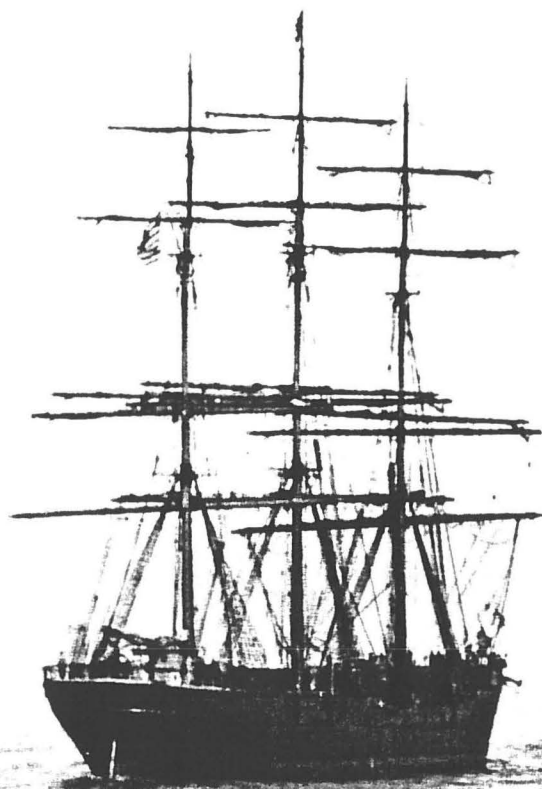




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**THE NATIONAL MARITIME MUSEUM ASSOCIATION**  
**Balclutha Deck Renewal Project**

DAILY LOG



**STAR OF ALASKA being towed out of San Francisco Bay in April, 1928.**

In the age of steam power, she was one of the last merchant sailing vessels still working the salmon trade. The Alaska Packers Association used the Star of Alaska to make the seasonal runs north from 1906 until 1930, when she was the last square rigger left in the great Star fleet.

Courtesy of San Francisco Maritime National Historical Park

Photograph by Tod Powell, San Francisco, April 3, 1928

B5.40,254n

**THE NATIONAL MARITIME MUSEUM ASSOCIATION**

**1997-1998  
Balclutha Deck Renewal Project**

**DAILY LOG**

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Historical Photos of the BALCLUTHA

Descriptive Photos of the 1997-98 Main Deck Renewal Project

Daily Labor Log for the Main Deck Renewal Project

Appendix of Materials Used





The *Balclutha* was launched in December of 1886 in Glasgow, Scotland by the shipbuilding firm of Charles Connell & Co. The steel hulled, three masted, square rigged vessel was typical of merchant ships of that time.

The owners of the *Balclutha* put her to immediate service in "the general trade," hauling cargoes to and from ports all over the world on long ocean voyages. During her service as a Deepwaterman the *Balclutha's* home port was Glasgow, but she hauled to and from such ports as San Francisco, Capetown, New York, Rangoon, Iquique, Montevideo and Calcutta. The *Balclutha* carried cargoes such as wine and spirits from London, California grain from San Francisco, hardware from Antwerp, coal from Wales, guano from Callao, and wool from New Zealand. The *Balclutha* rounded Cape Horn 17 times from the time of her launching until she was sold in San Francisco in 1899.

San Francisco interests with sawmills in the Puget Sound purchased the *Balclutha* to haul lumber across the Pacific to Australia under the Hawaiian flag. For three years her cargoes of lumber averaged 1.5 million board feet per haul to Port Pirie and Melbourne, returning with coal to San Francisco. In 1901, Old Glory became her flag after a special act of Congress authorized the foreign vessel *Balclutha* to be registered as an American merchant ship.

The *Balclutha* was then put to work for the Salmon trade in Alaska. She hauled cannery supplies and fishermen from San Francisco to Alaska during Salmon seasons, and returned with cargoes of tinned salmon. In 1904, the *Balclutha* was wrecked near Kodiak Island and lay on a reef until she was purchased for \$500 by the Alaska Packers Association. The ship was salvaged and refitted in 1906 as the *Star of Alaska*, the fifth square rigger bought by the Alaska Packers Association for their growing Star fleet. At the turn of the century, cargo ships were being built as coal burning steamers, replacing the sailing ships of the 19<sup>th</sup> Century. The *Star of Alaska* would continue to work the salmon trade until 1930 as the last square rigger to make the trip north for the Alaska Packers Association.

After a few idle years, the *Star of Alaska* was saved from the scrap yard by new owners in Southern California. Re-named the *Pacific Queen*, the ship became a stage for exhibitions and a setting for Hollywood movies, including Mutiny on the Bounty in 1934. In 1952 the ship was in a sorry state of disrepair and was towed to San Francisco Bay where ended up in the mud flats of Sausalito.

This rare old ship was rescued once again. In 1954, the San Francisco Maritime Museum Association bought an old and neglected vessel and embarked on a year long restoration effort made possible by many generous donations of money, materials and labor. Local businesses and individuals cared enough to help preserve this historic treasure for future generations.

44 years later, the preservation of the *Balclutha* continues. The National Maritime Museum Association and the National Park Service are now working together to maintain and restore the *Balclutha*. This current project includes rebuilding the main deck, repairing the main deck waterways, re-stepping of the fore mast, and any necessary hull repairs. These necessary measures are only made possible through some federal funding and the same type of generous community support that made the original restoration successful. The support continues, the work progresses, and the *Balclutha* endures.

08-203

**BALCLUTHA midship plan.**

Charles, Connell & Co. Shipbuilders launched the Steel Sailing Ship Balclutha on December 9, 1886. This photo shows a plan for a midship section bearing the shipbuilders stamp dated May 19, 1886 in the center, and two signatures in the lower corners. The all riveted construction incorporated both iron and steel for different components of the ship. Such historical evidence of the original materials and techniques help to guide our ongoing efforts to faithfully preserve and repair the Balclutha.

Courtesy of San Francisco Maritime National Historical Park  
S.35,930nl



# MIDSHIP SECTION STEEL SAILING SHIP N°147

SCALE 1/2 INCH PER FOOT

## DIMENSIONS

LENGTH AS PER RULES	244'-6"	OR 244'-5"
HARP MOULDED BREADTH	19'-2"	19'-2"
GIRTH OF HALF MIDSHIP FRAME SECTION	34'-9"	34'-7 1/2"
DEPTH FROM TOP OF KEEL TO M.D. BEAMS	25'-4"	25'-3 1/2"

NUMERALS 14.12/20660.40  
DO. FOR RUBB 21.4/0.16

## PROPORTIONS

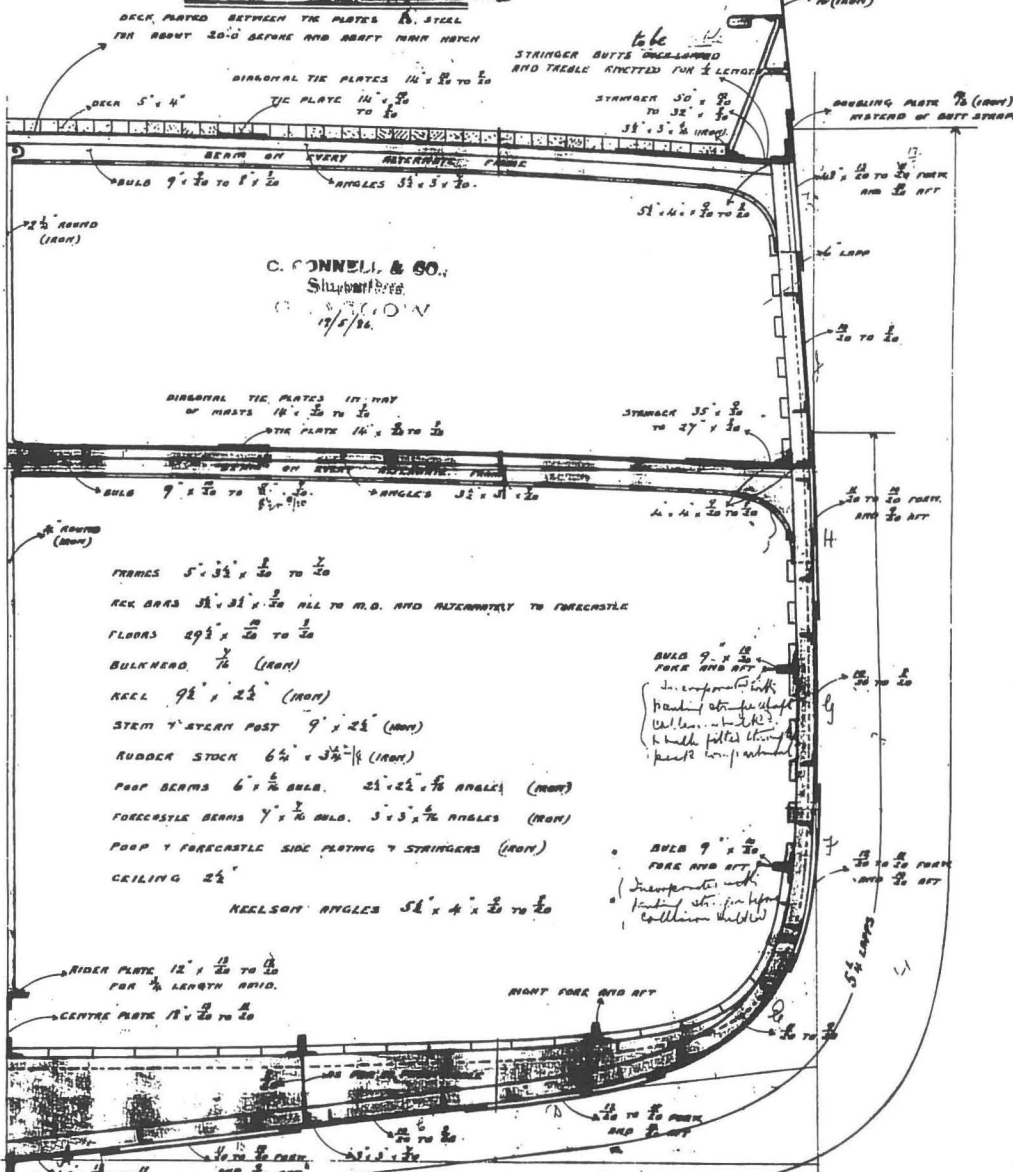
DEPTHS IN LENGTH 9.65  
BREADTHS 6.39

## ANCHORS AND LIFTS

3 BOWEN'S	EX STEEL COLL. WEIGHT	10 1/4 CWT
1 STEEL		11 1/2
1 ANCHOR		5 1/2
240 FATH. STOD CHAIN CABLE		1 1/2
75 STEAM CHAIN		1 1/2
90 TO H LINE		11
40 HAWKER		10 1/2
40 HARP		6 1/2

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TO CLASS 100 A.L. AT LLOYDS



C. CONNELL & CO.  
Shipwrights  
17/8/86

BUTT STRAPS THICKER RIVETTED AND 1/2\"/>

BUTT STRAPS FITTED TOP AND BOTTOM WITH ANGLES 3 1/2\"/>

And in addition, where the outside strakes exceed 4 1/2\"/>

Class 100



## **THE NATIONAL MARITIME MUSEUM ASSOCIATION**

### **Balclutha Deck Renewal Project**

The National Maritime Museum Association originally restored the Balclutha in 1955. Since that time the Maritime Museum and all the historic ships at Hyde Street Pier were incorporated into the San Francisco Maritime National Historical Park as managed by the National Park Service. The current mission of the Association is one of stewardship and education in partnership with the San Francisco Maritime National Historic Park.

This private-public partnership is now responsible for the current restoration project of the historic sailing ship Balclutha, which includes replacing the entire main deck, rebuilding the main deck waterways, re-stepping the fore mast and any necessary hull repairs.

The Association has funded and managed the main deck renewal project. The leaking main deck was damaging the vessel structures below the main deck level. Some of the deck planking was rotting and the underdeck steel deck beams were rusting. The Association recognized the need to replace the leaking main deck in order to stop the water intrusion that threatened the integrity of the vessel. The new main deck will be structurally sound and historically accurate and will provide a watertight cover for the lower decks for decades to come. This project was made possible by the generous donations received from individuals and organizations that care enough to help preserve our maritime heritage.

The restoration of historic ships requires careful attention to preserving historic fabric and to reproducing the authentic materials and techniques used in the original construction. To ensure the quality and historic accuracy of the work, the Association's project management team is at the shipyard every working day. The Project Manager for the Association is Anthony Carter, an experienced and respected marine consulting specialist. The Association's Master Shipwright is John Burns, who has had years of experience building and sailing both historic and modern ships, and the Job Monitor responsible for this log is Andy Foster. Working together, the entire staff of the National Maritime Museum Association is continuing the work of historic ship preservation that it started nearly 50 years ago.

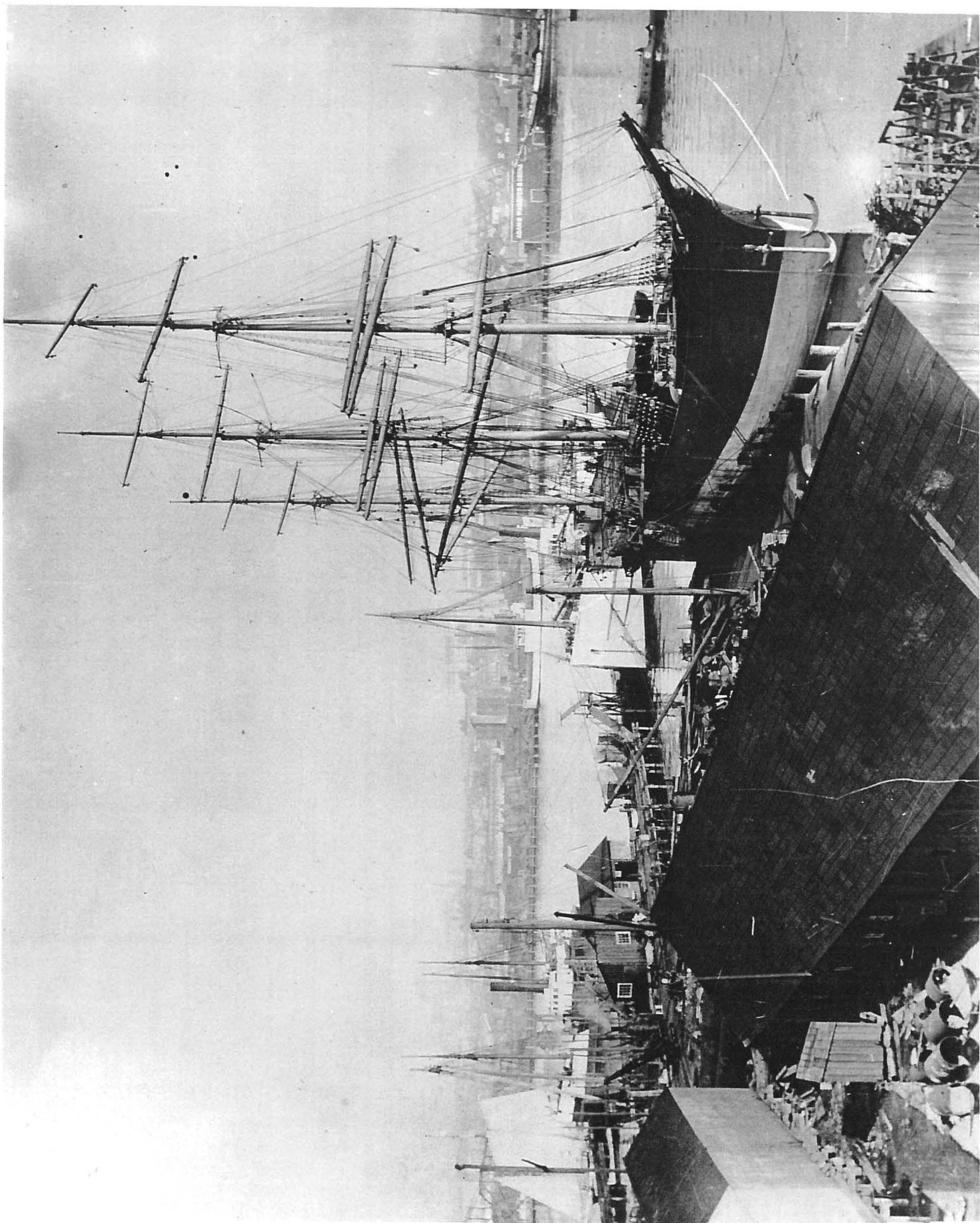


**BALCLUTHA, extending the poop deck at United Engineering Works, Alameda, California in 1911.**

Alameda was the site of major shipbuilding and repairs at the turn of the century as it is today. The original poop deck on the Balclutha ended just before the mizzen mast. In 1911, the Alaska Packers Association ordered the poop deck extended over 68 feet to shelter the fishermen during their seasonal trips to the salmon runs in Alaska. This photo shows the work underway on the Balclutha at a shipyard in Alameda, not far from the site of the shipyard doing the present restoration work.

Courtesy of San Francisco Maritime National Historical Park

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### **STAR OF ALASKA**

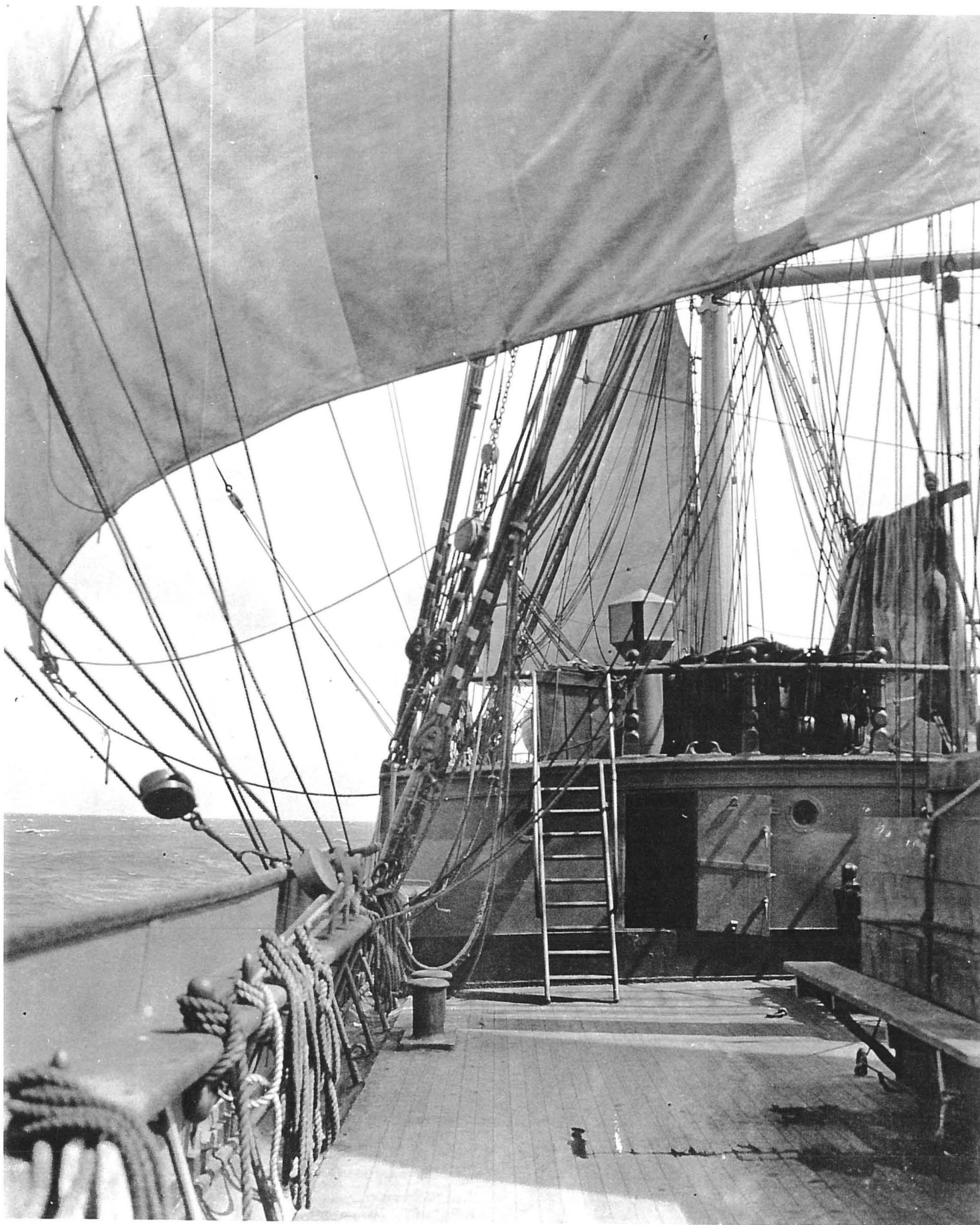
Under sail in the Pacific Northwest, this is a view from the starboard side of the main deck looking aft. The main course billows forward in the top of the photo and the spanker is set in the background. The poop deck was extended in 1911 to shelter the fishermen on their trip north to Alaska, the starboard door to that shelter is seen open in this photo.

Courtesy of San Francisco Maritime National Historical Park

Gordon Grant Collection

J9.28,512n

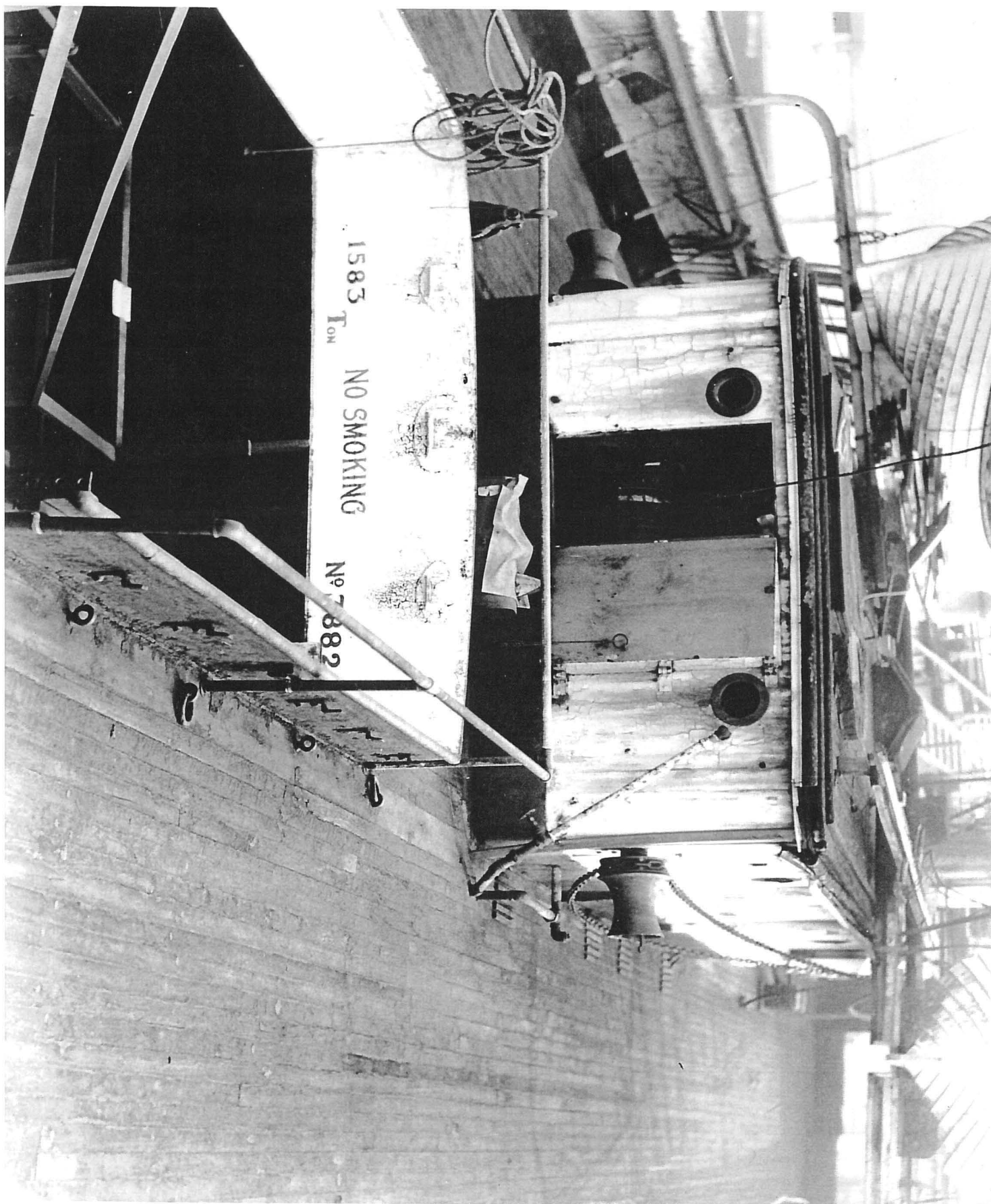




**PACIFIC QUEEN, 1947, possibly Long Beach.**

The after end combing of the main hatch was cut away sometime during her stint as an exhibition ship to make way for the stairs seen in this photo. The subsequent refitting left an obvious weld bead along the entire length of that section of hatch combing. Part of the present repair work to the main hatch includes fairing in the combing to replicate the original construction.

Courtesy of San Francisco Maritime National Historical Park  
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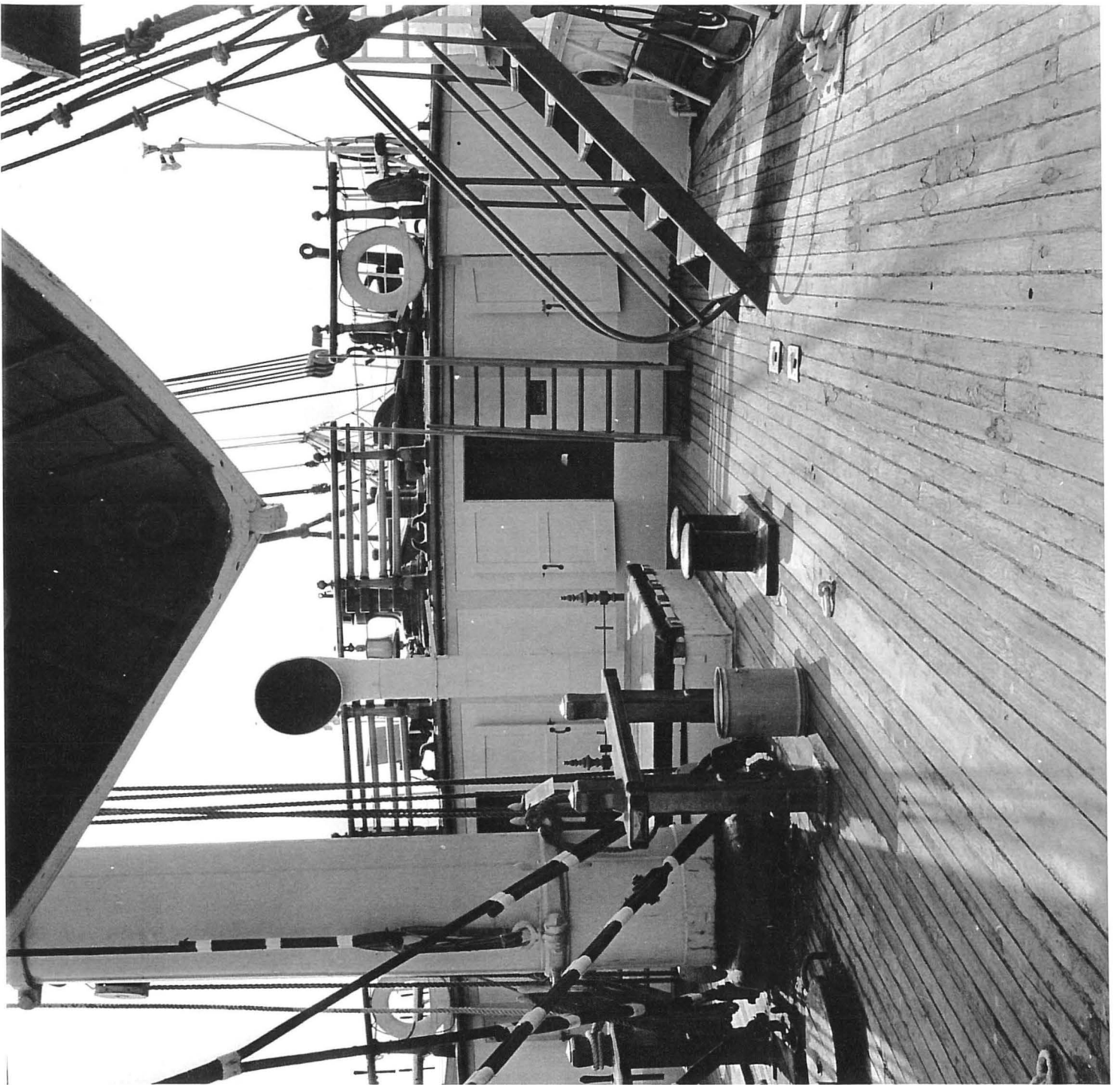


**BALCLUTHA, Scene on the Main Deck at Pier 43, April 1959.**

The Maritime Museum first opened the Balclutha to the public in 1955. This is a view on the main deck looking forward at the forecastle from the starboard side of the midship house. The gangplank leading over the starboard rail is no longer used at the Balclutha's present home at the Hyde Street Pier.

Photograph by Karl Kortum  
Copyright 1997, Jean Kortum.

San Francisco Maritime National Historical Park  
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**Mizzenhatch Repair at Pier 43.**

After the major restoration work was completed in 1955, dedicated Maritime Museum riggers continued to maintain and repair the Balclutha. This photo shows Noak Nelson and Johnny Grueland at Pier 43 rebuilding the mizzenhatch combing and a section of the poop deck just ahead of the mizzen mast. Then and now, ambitious restoration projects and continued maintenance further our commitment to secure the Balclutha's future.

Photograph by Karl Kortum  
Copyright 1997, Jean Kortum.

San Francisco Maritime National Historical Park  
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**THE NATIONAL MARITIME MUSEUM ASSOCIATION**  
**Balclutha Deck Renewal Project**

**The present BALCLUTHA Main Deck Renewal Project**  
**began work in November of 1997 and lasted until June of 1998.**  
**The following photos and log are intended to chronicle the processes**  
**and results of this major restoration effort.**



## **THE NATIONAL MARITIME MUSEUM ASSOCIATION**

### **Balclutha Deck Renewal Project**

Work on replacing the entire main deck of the Balclutha began in October, 1997. Before any planks could be removed, all the hardware mounted on deck had to be recorded for their later reinstallation into the newly laid timber. Every bitt, rail, ringbolt, eyebolt, pump, ladder, manhole and ventilator was identified, catalogued and removed from the main deck and restored as necessary.

With the deck cleared of all interferences, the old deck bolts were hammered out and each plank was pulled up and taken off the ship. Over 1200 original deck bolts were found to be in good enough condition to be cleaned, refurbished and re-galvanized for fastening the new deck. To replace the badly corroded bolts, a special die had to be cast to recreate the hundred year old cheese head design for over 1500 newly forged bolts.

Once all the fir deck planks and teak margin planks were removed, the supporting steel deck beams were surveyed for repairs. Most of the steel deck structure was found to be in remarkably good condition. Before the steel repair work began, the entire main deck area was sandblasted down to bare steel and coated with a rust resistant epoxy primer. A few areas on the deck beams were rusted bad enough to require cutting out sections and replacing with new steel. Any new steel repairs had to be riveted into place to replicate the original construction techniques. A crew had to be specially trained for this work by a master of the antiquated craft of riveting.

Both the main hatch and the forward hatch were completely disassembled and lifted out on deck. After the necessary repairs to the hatch combings, ledgers and tie braces, each hatch was reassembled, lowered back into the deck and refastened together in their original positions using hundreds of hot rivets.

When the steel work was completed, the entire main deck area and the deck beams were coated with epoxy primers and paints that are designed to help prevent further rust and corrosion of the ship.

The new wood used for the main deck was four inch thick Douglas Fir deck planks and four inch thick teak margin planks. The fir planks were four inches wide at the bottom and up to twenty-six feet long. These massive planks required two big rig trucks to ship over 16,000 board feet from lumber mills in Oregon. Every plank was cut to fit a patterned layout, bedded on the steel deck beams, drilled and bolted tight, the bolt holes plugged, and then the finished deck had to be faired down and scraped smooth.

After the new wood was laid and the deck fair, a crew of traditional caulkers filled the seams between deck planks with threaded layers of cotton and oakum. Each seam was then hammered down tight and sealed over with hot pitch. The excess pitch was scraped off the deck to make a smooth weatherproof surface.

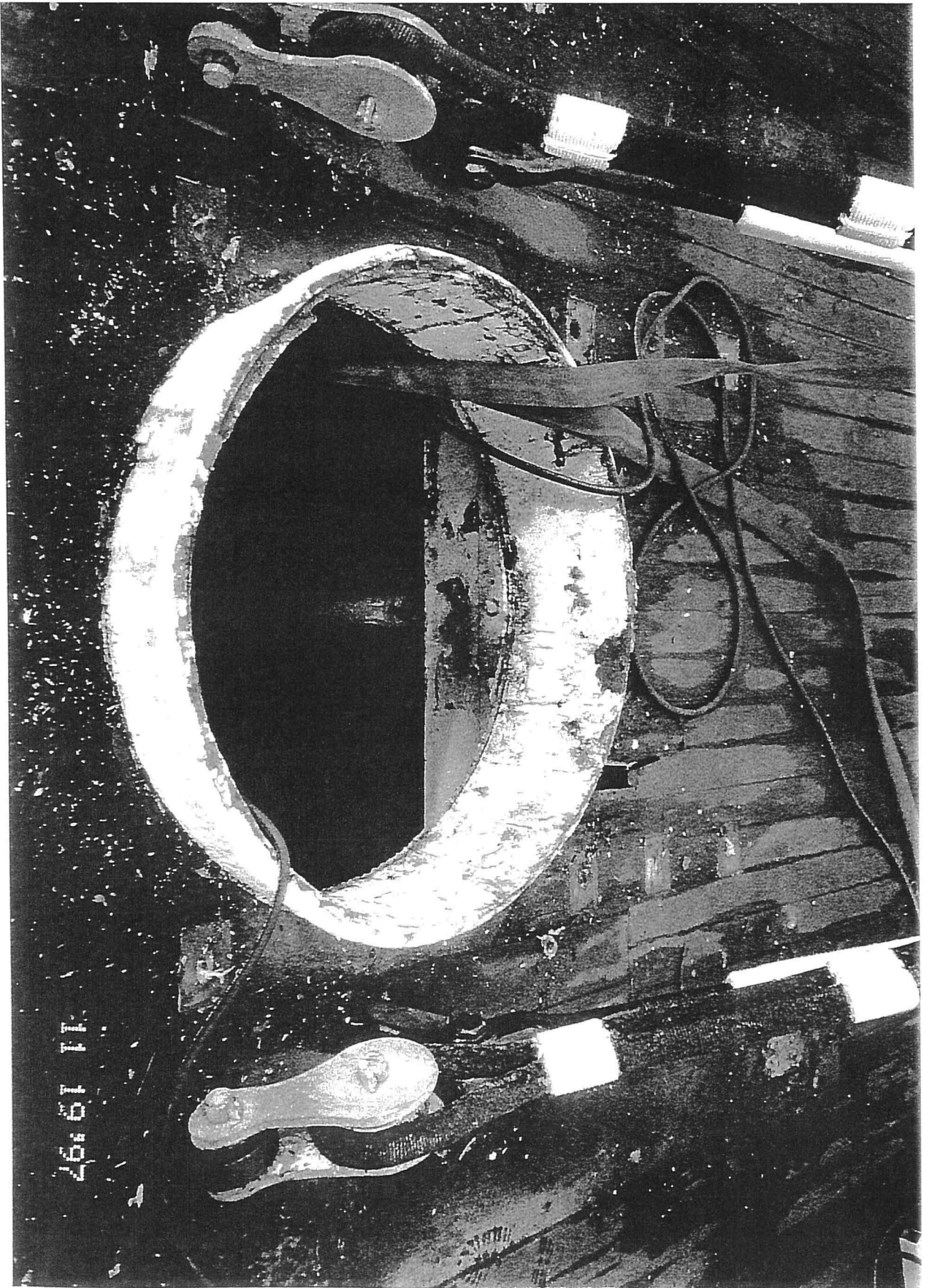
Finally all the original deck fixtures were refitted in their proper places and fastened into the rebuilt deck. The new deck planks were cleaned, bleached, treated with a borate preservative solution and oiled.

The total restoration of the main deck is now complete. As a result of eight months of hard work, constant supervision by NMMA staff and the cooperation of the National Park Service, the restored main deck will help keep the Balclutha structurally sound and watertight for decades to come.

**Foremast Removed.**

Part of the present repair work directed by the National Park Service included the removal, repair and re-stepping of the fore mast. This photo shows the main deck around the fore mast after the fore mast has been removed. The mast and the yards were kept under a containment structure on the dock for repairs and painting.

Photograph by Andy Foster.

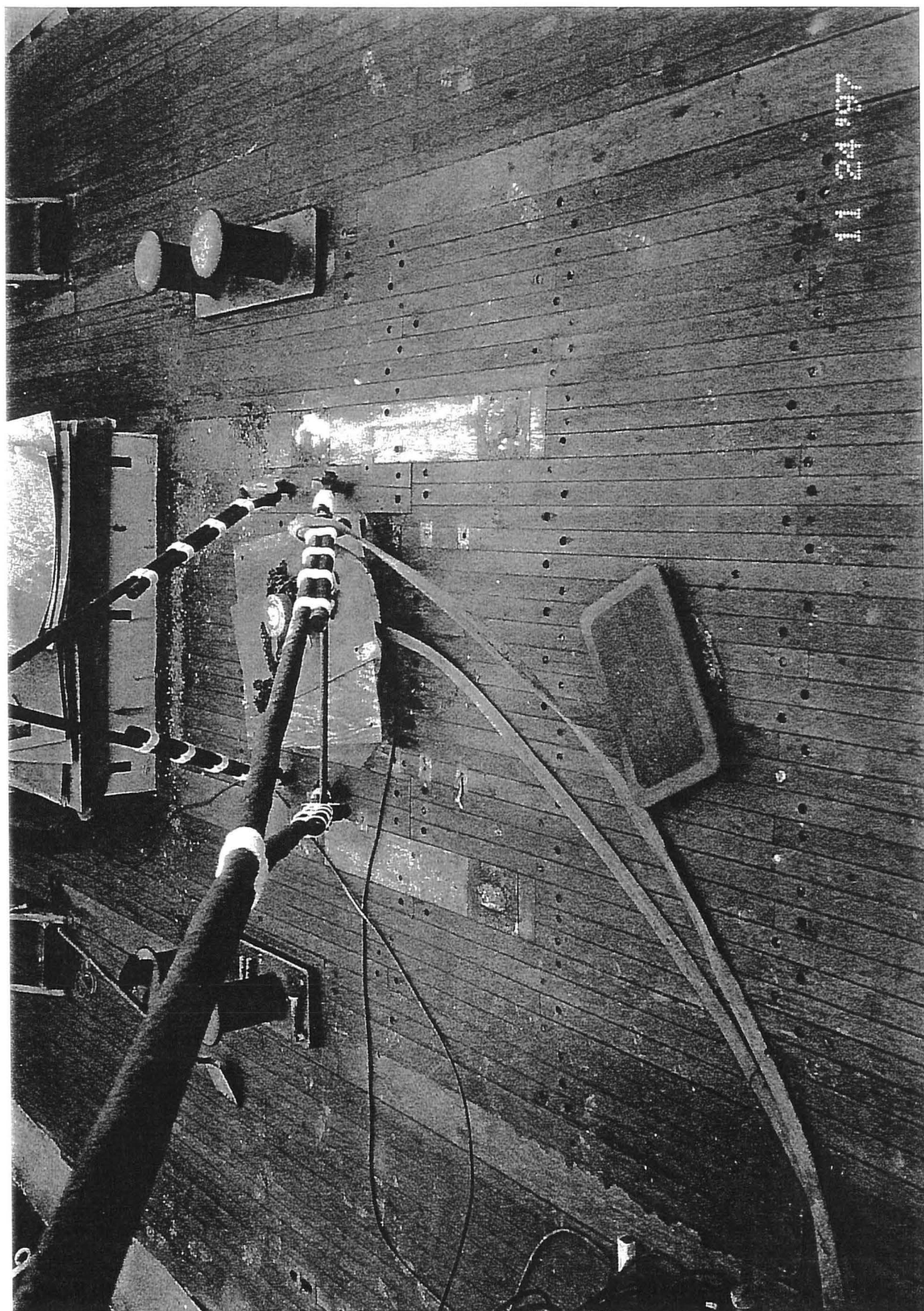


**Deck Plank Pattern.**

All of the margin planks, deck planks and fixtures mounted in the deck had to be carefully documented to insure that the present deck renewal would accurately reproduce the previous deck layout.

Photograph by Andy Foster.

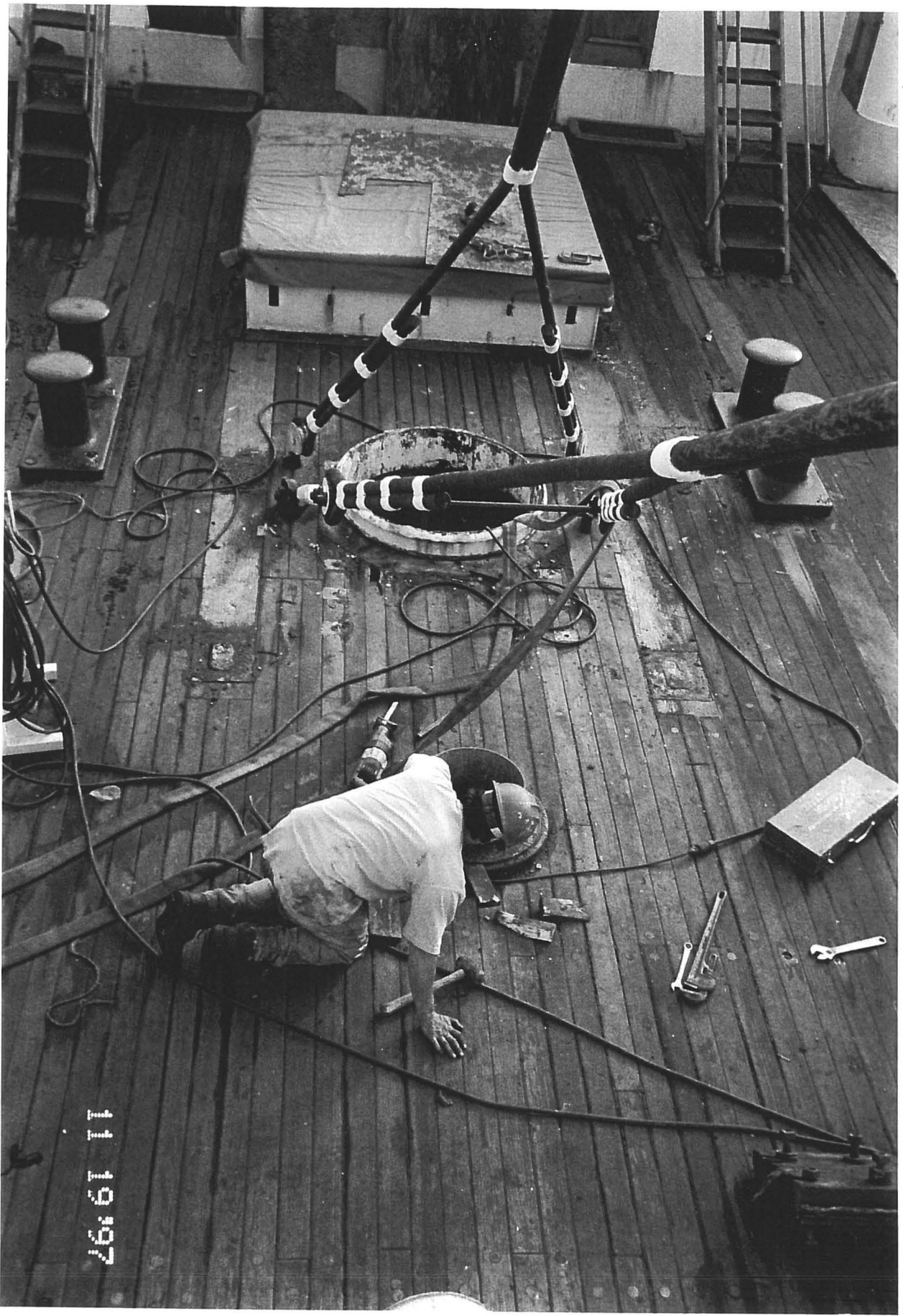




### **Removing Interferences.**

Every bitt, rail, ringbolt, eyebolt, pump, ladder and ventilator was identified, catalogued and removed from the deck for their later reinstallation into the newly laid timber. Most of the deck fixtures and their fasteners were in good enough condition to be replaced exactly as they stood before the project began.

Photograph by Andy Foster.



### **Rotten Fir Deck Planks.**

Much of the douglas fir deck planking removed was in good condition. Some of the rot pictured here was found around the main mast where the fresh water pump stood. One of the main goals of the Balclutha Deck Renewal Project was to restore the camber of the main deck designed originally to shed any standing water off the deck and down the waterways.

Photograph by Andy Foster.

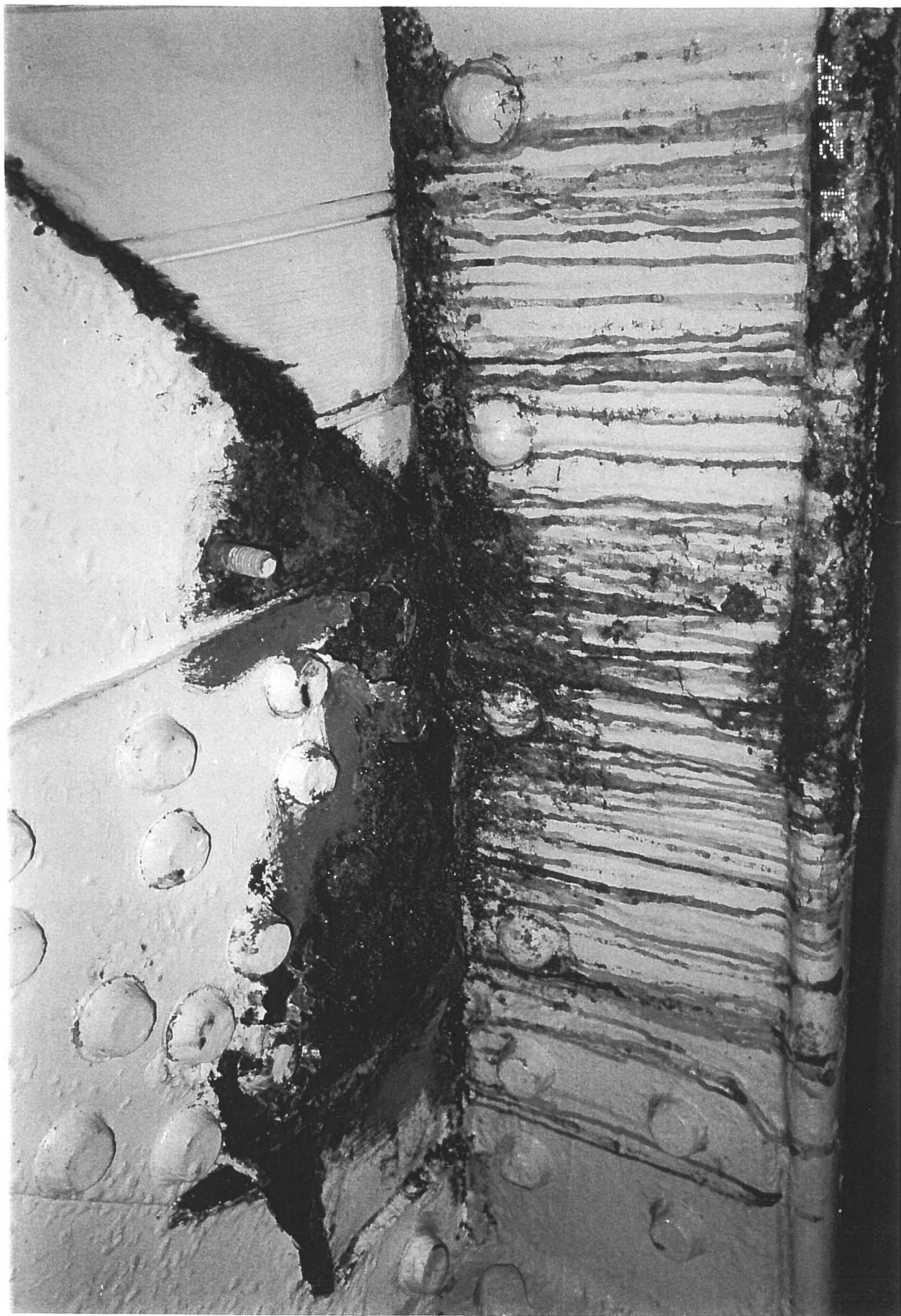




### **Rusted Steel Deck Plating.**

The steel structure underneath the main deck was affected by the rotten wood deck planking. The biggest uncertainty that faced the Balclutha Deck Renewal Project before the deck planking was removed was the condition of the steelwork and what repairs would be necessary. Corroded areas such as the one pictured here proved to be more dramatic than diagnostic as most of the underdeck steel work was found to be in salvageable condition.

Photograph by Andy Foster.

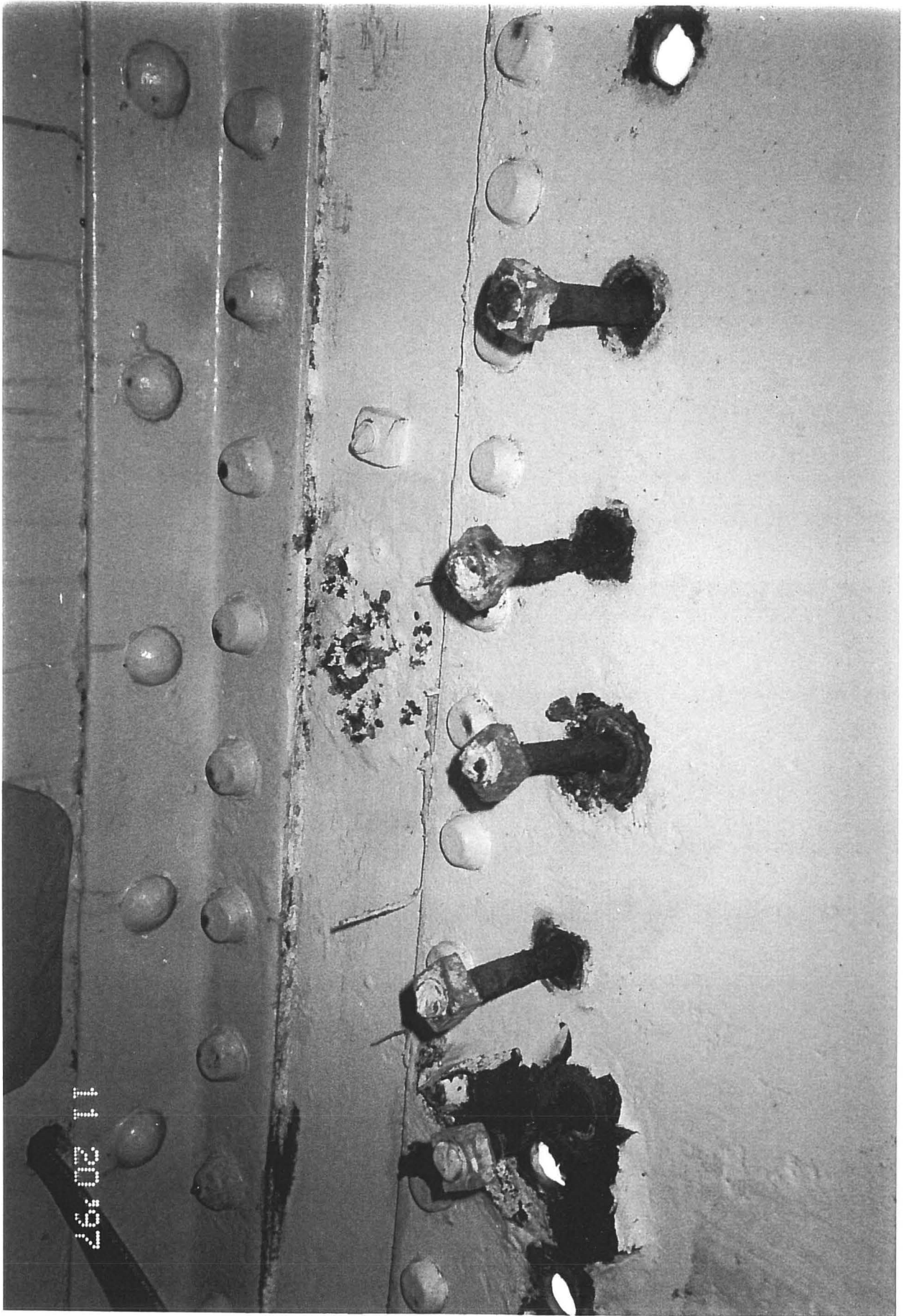


**Deck Bolts.**

The present Balclutha Deck Renewal Project worked hard to preserve the historic fabric of the ship. Over 1200 original “cheese head” deck bolts were in good enough condition to be treated and reconditioned for reuse. Many others were found to be too far corroded to be salvageable. A special die had to be cast in order to authentically reproduce the antique design of the original deck bolts.

Photograph by Andy Foster.



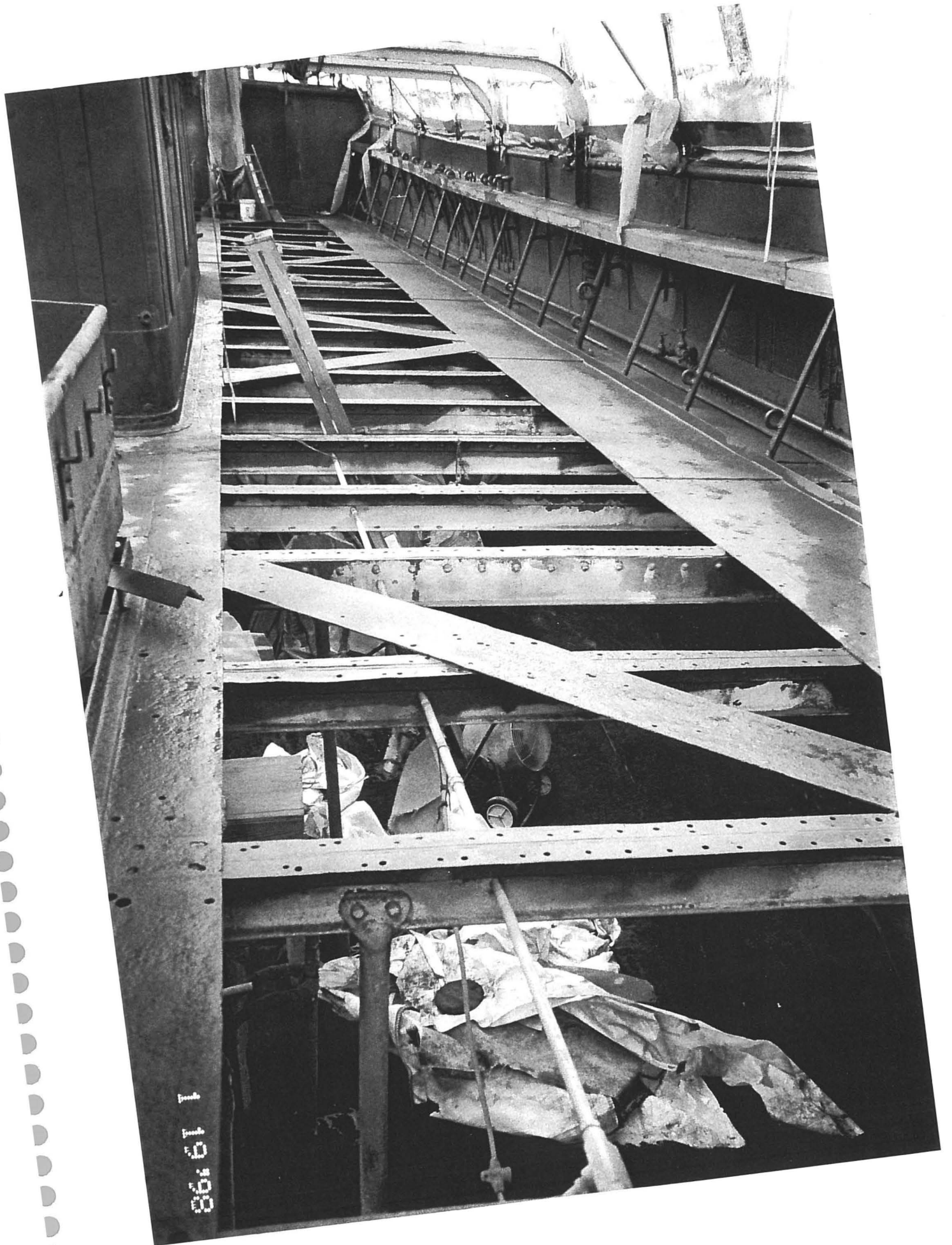


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**Exposed Steel Deck Beams.**

With all the wood deck planking removed, the main deck offers a rare view of the underdeck steel structure. In this photo the entire main deck area has been sandblasted and coated with an epoxy primer which will help to prevent further corrosion of the steel.

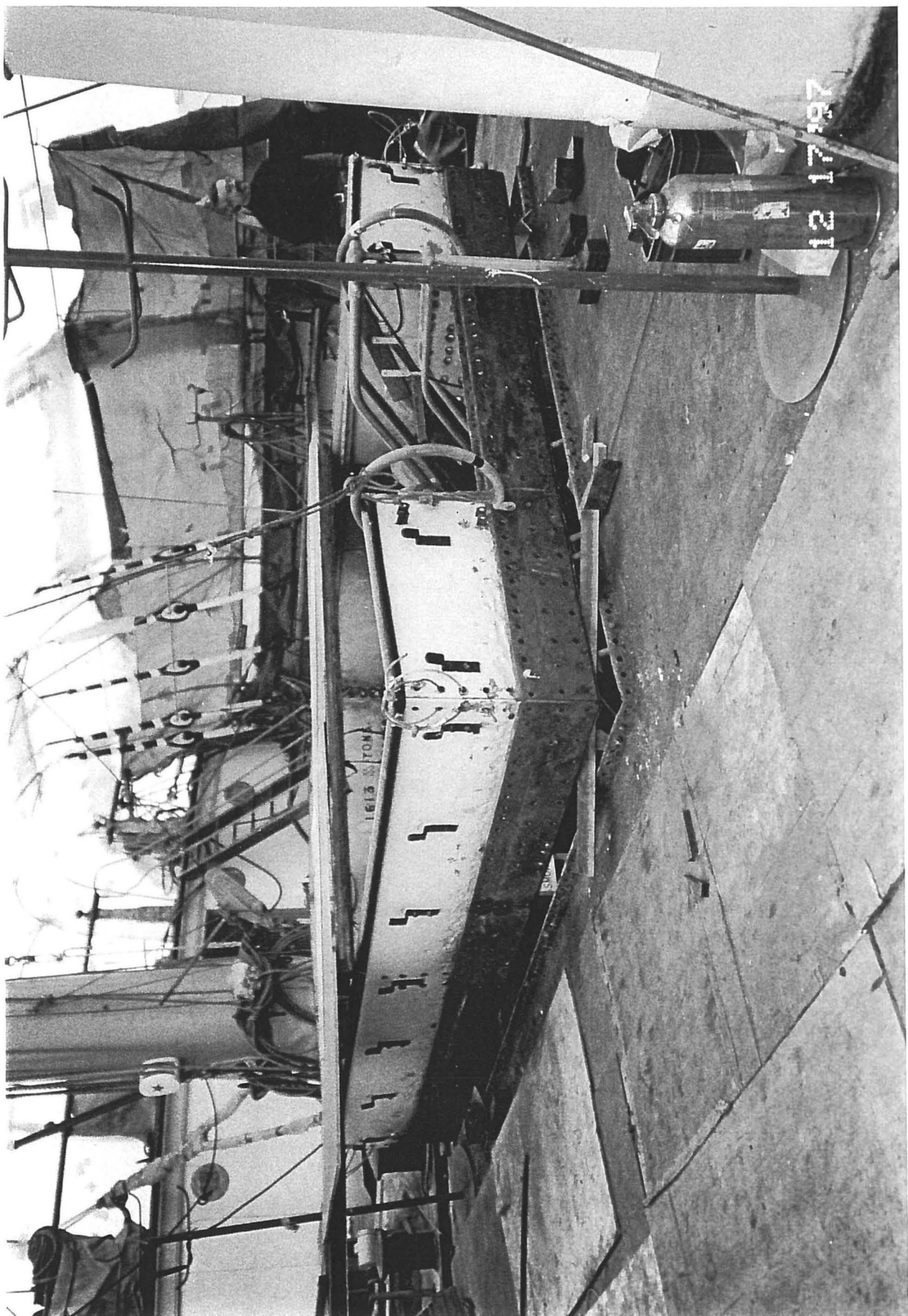
Photograph by Andy Foster.



**Main Hatch Removed.**

The main hatch was completely disassembled, lifted out and placed on angle irons on the main deck. The necessary repairs were completed and each component was coated with two coats of epoxy primer before being lowered back into position and riveted together.

Photograph by Andy Foster.

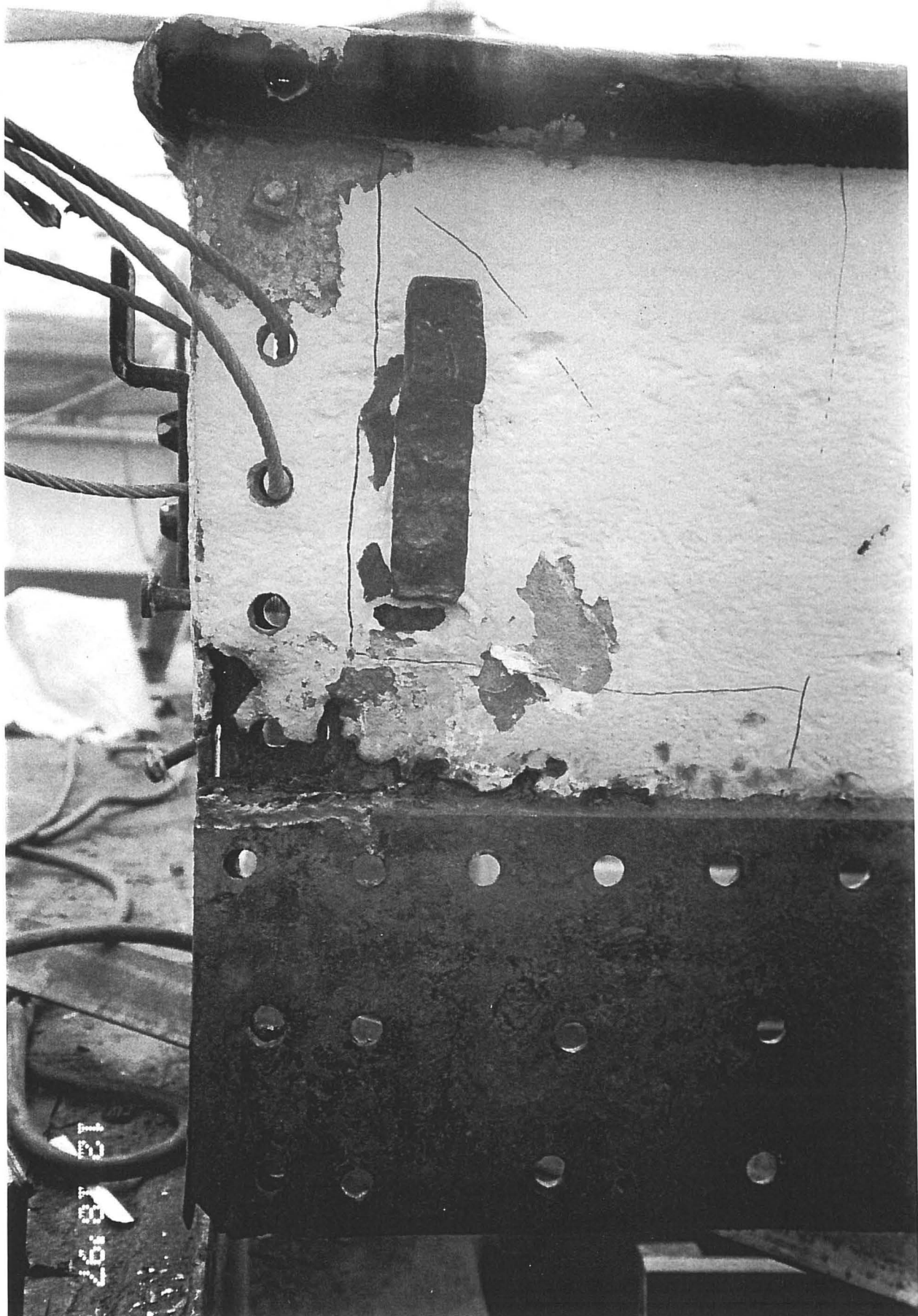




**Main Hatch Combing Corrosion.**

Layers of laminated steel were corroded away around the starboard side after end corner of the main hatch. After the entire main hatch was disassembled and lifted up on deck, the corroded area was marked off to be cut out with a torch and replaced with a new steel patch.

Photograph by Andy Foster.

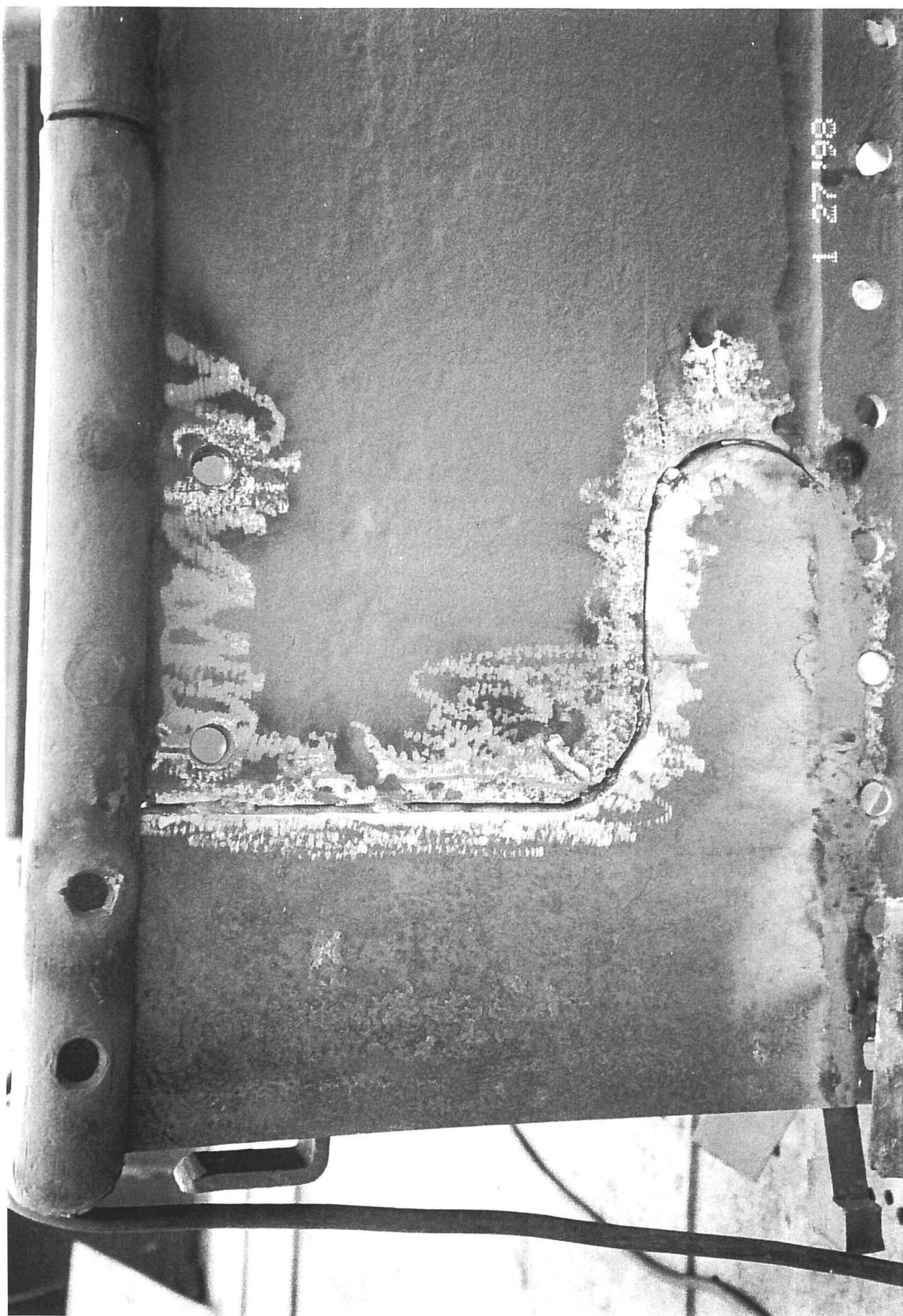


**Main Hatch Combing Repair Patch.**

A new steel plate was cut to fit where a corroded section was removed from the existing hatch combing. The insert pictured here was welded, faired in, painted and riveted to match the rest of the starboard side hatch combing.

Photograph by Andy Foster.



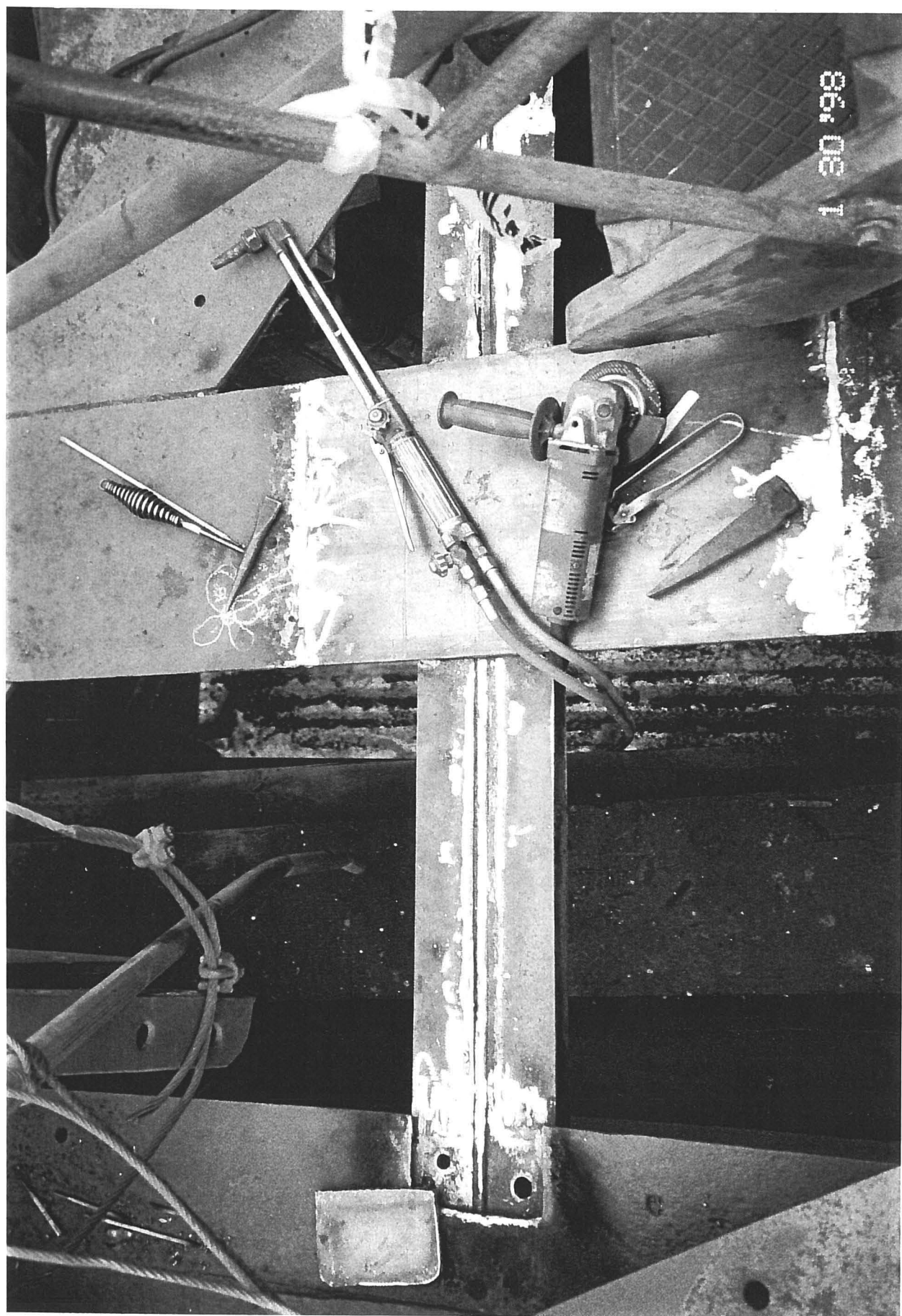


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**Sandblasting the Main Deck Area.**

The Main deck and the tween deck area had to be completely encapsulated from sandblasting operations. Over 70 tons of aggregate blast grit were used to sandblast the steel deck structures down to bare steel. The prepared steel surfaces were then painted with epoxy coatings which will help to prevent corrosion for years to come.

Photograph by Andy Foster.

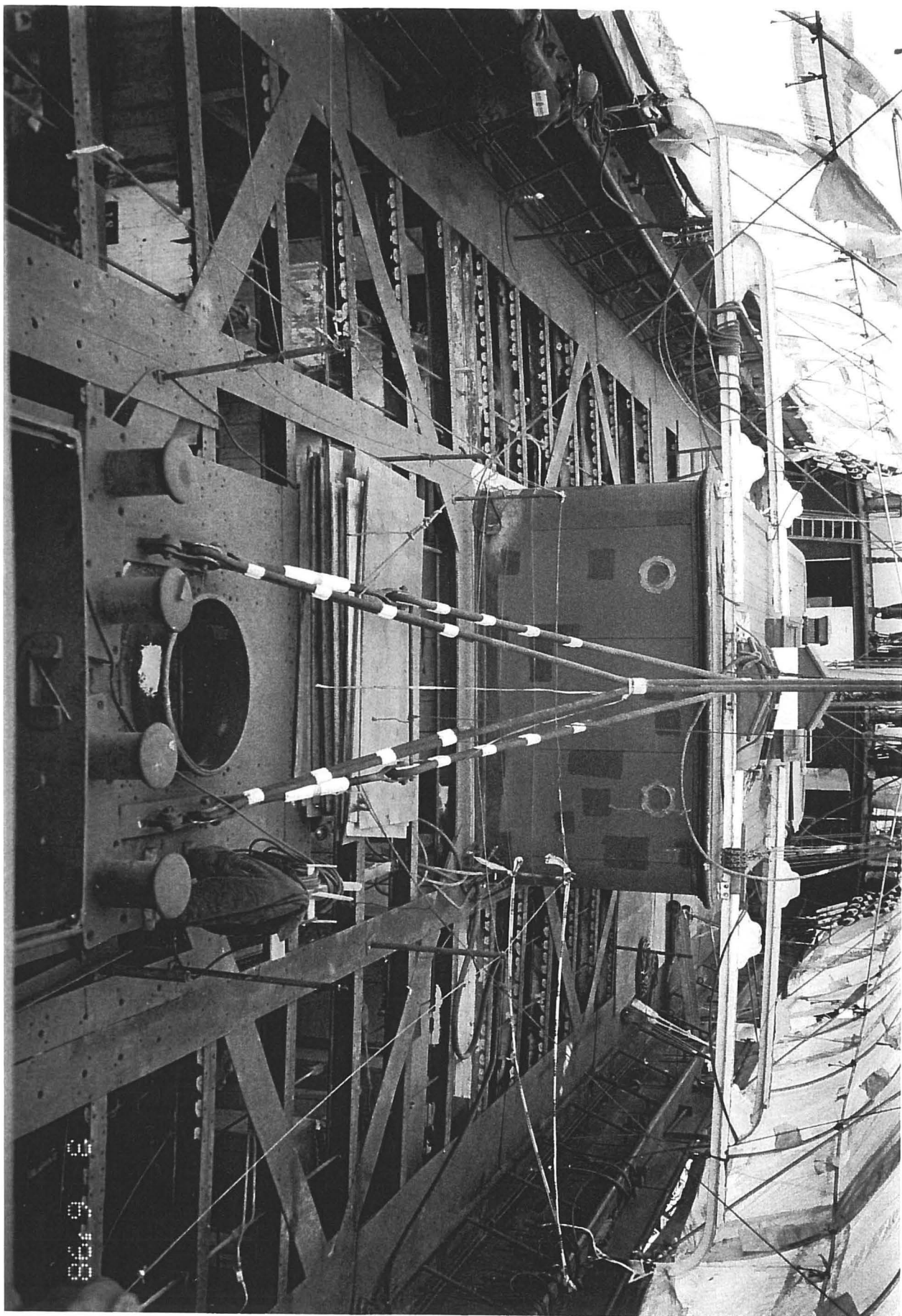


**Steel Deck Beam Repairs.**

Sections of deck beam flange and margin plate have been replaced with new steel. This photo shows new steel sections fastened around the port side of the forward hatch before being riveted together and before any deck bolt holes were drilled.

Photograph by Andy Foster.



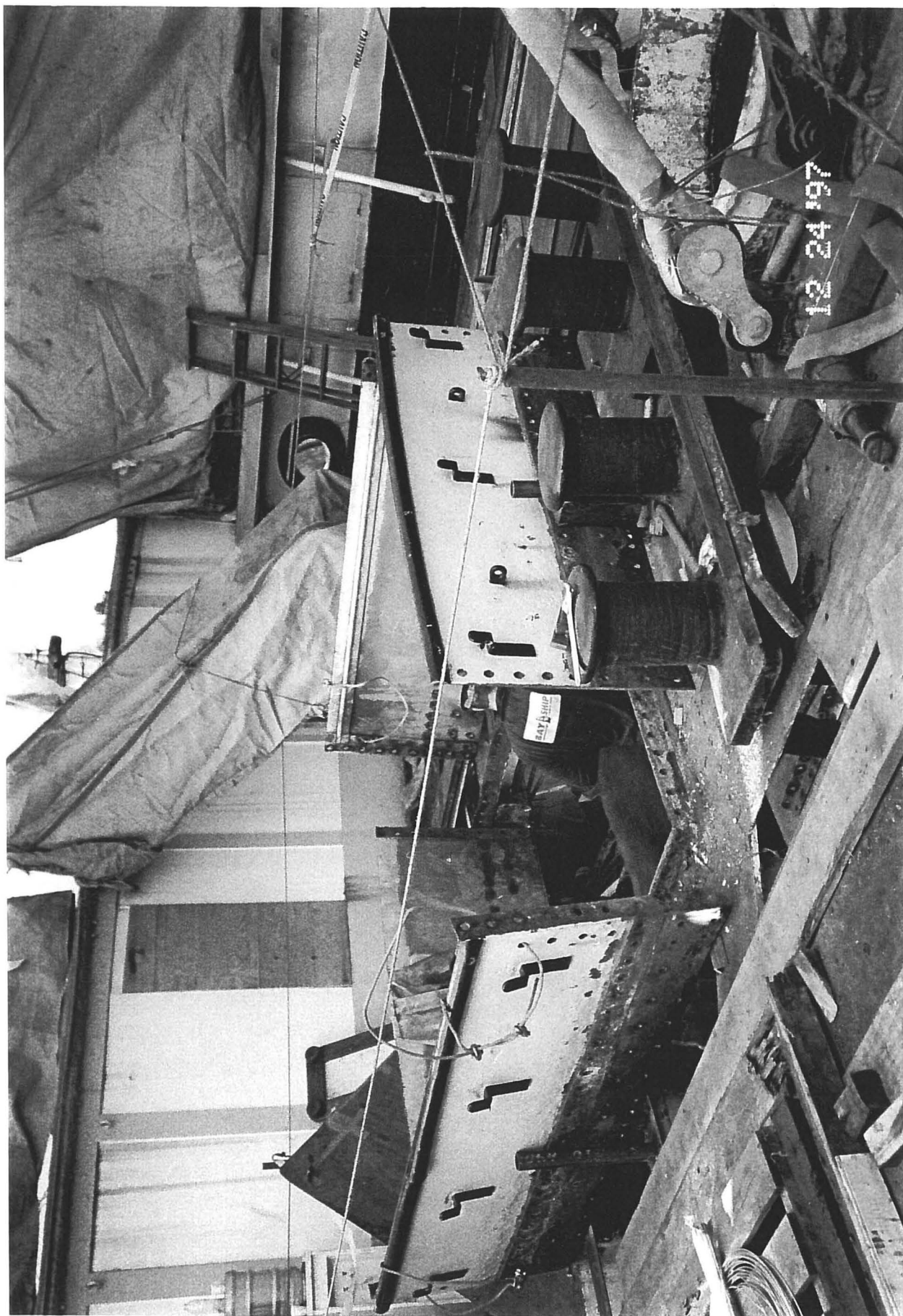


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### **Forward Hatch Repair.**

Three sides of the forward hatch were completely disassembled to facilitate the necessary repairs. Most of the hundreds of original rivets that held the hatch combings together were found to be still binding the steel plates together with strong and watertight joints.

Photograph by Andy Foster.



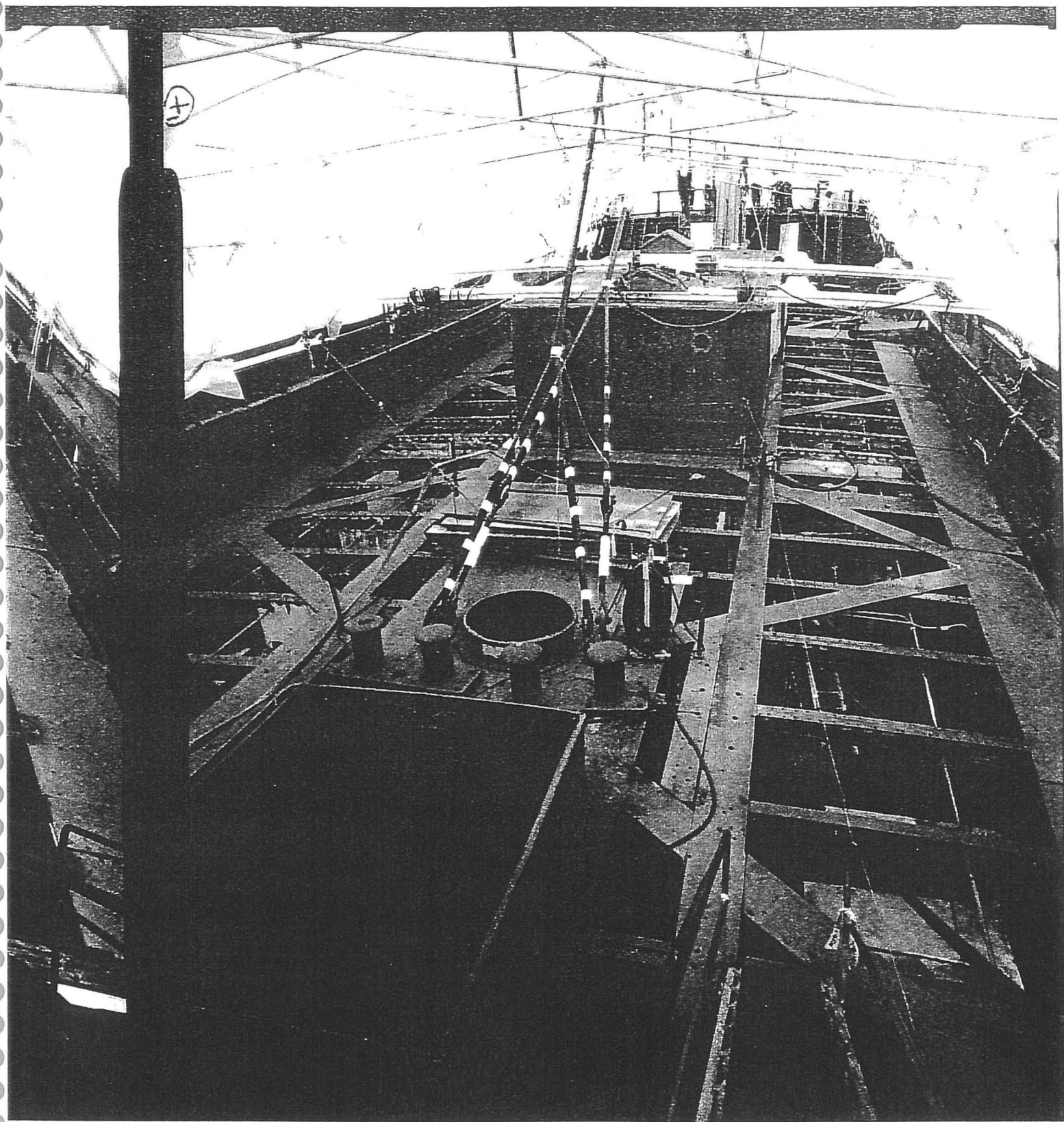
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### **Weather Containment Structure.**

With the fore mast removed, the entire main deck area was enclosed in an aluminum and plastic containment structure during the work done alongside the dock. This containment was provided to protect the main deck from weather and to contain the sandblasting done on the main deck area. The winter of 1997-98 was one of the most severe rainy seasons the bay area had seen in over 100 years.

Photograph by Andy Foster.



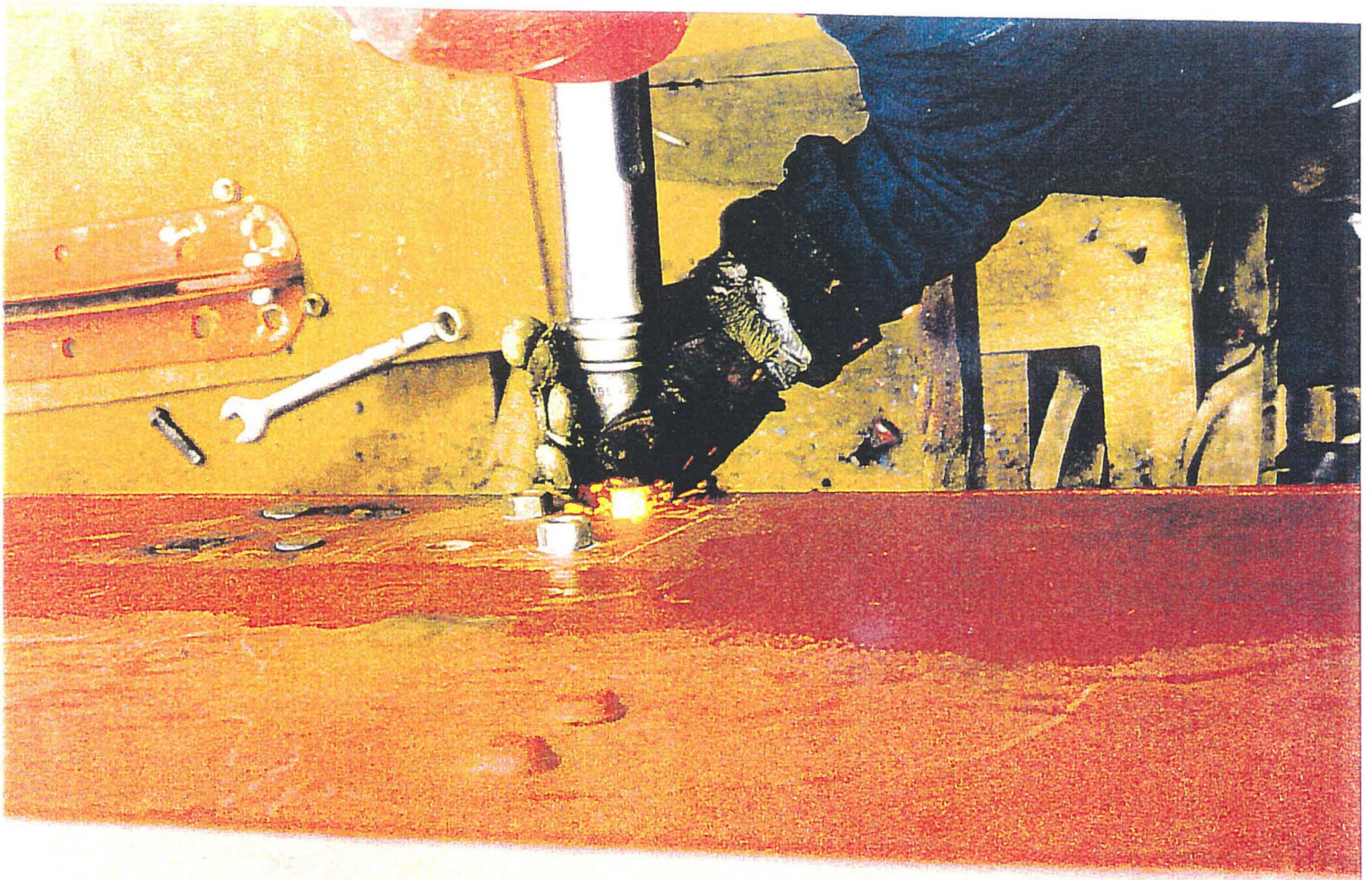


### **Riveting the Deck Beams.**

A crew of workers were specially trained by an expert in the practice of riveting. The rivets would be cut to size and heated to bright red before they were inserted and braced in place with a pneumatic ram and hammered into shape.

Photographs by John Burns.







### **Hot Riveting Work**

A single crew of riveters installed over 1600 new rivets in the main deck beams, flanges and hatches. It requires a strong hand to wrestle with a heavy pneumatic hammers, pounding each red hot rivet head into uniform shape.

Photograph by John Burns.





**The BALCLUTHA in Drydock.**

The 111 year old ship was hauled out for the first time since 1986. The hull below the waterline was found to be in remarkably good condition. The entire hull was sandblasted, the necessary steel repairs were carried out, new zinc plates were installed and the ship was coated with anti-corrosive epoxy paints.

Photographs by John Burns.





### **Brand New Bottom Paint**

With the steel repairs to the hull completed, the hull was painted with anti-corrosive primers, anti-fouling paints and advanced bottom paints to help keep the hull sealed and the entire exterior shipshape.

Photograph by John Burns.



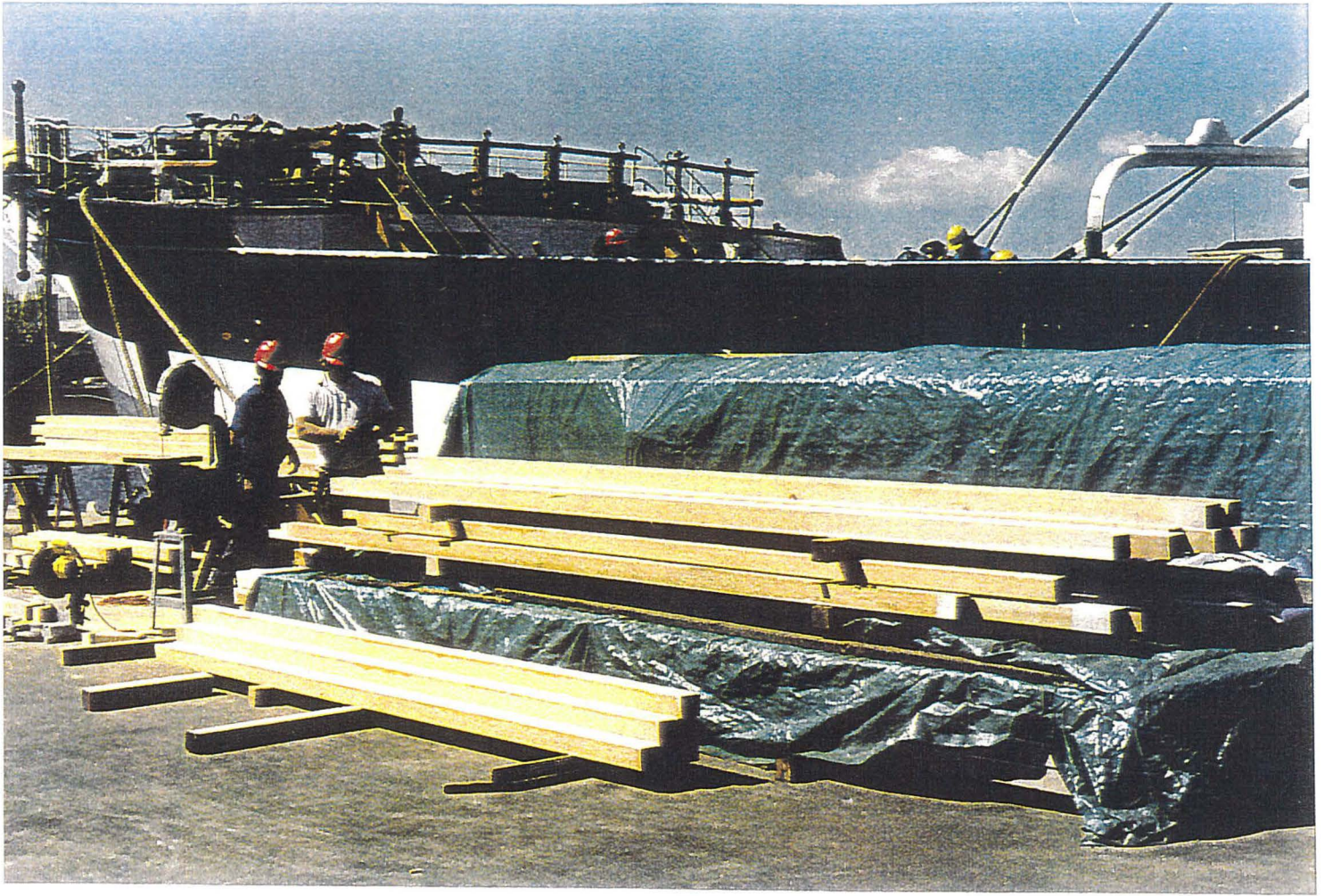


**New Douglas Fir Deck Planking.**

Over 16,000 board feet of douglas fir was cut and fitted to a carefully patterned deck layout. A team of shipwrights used clamps and wedges to force the planks tight together before boring and bolting each plank to the supporting steel deck beams.

Photographs by John Burns.





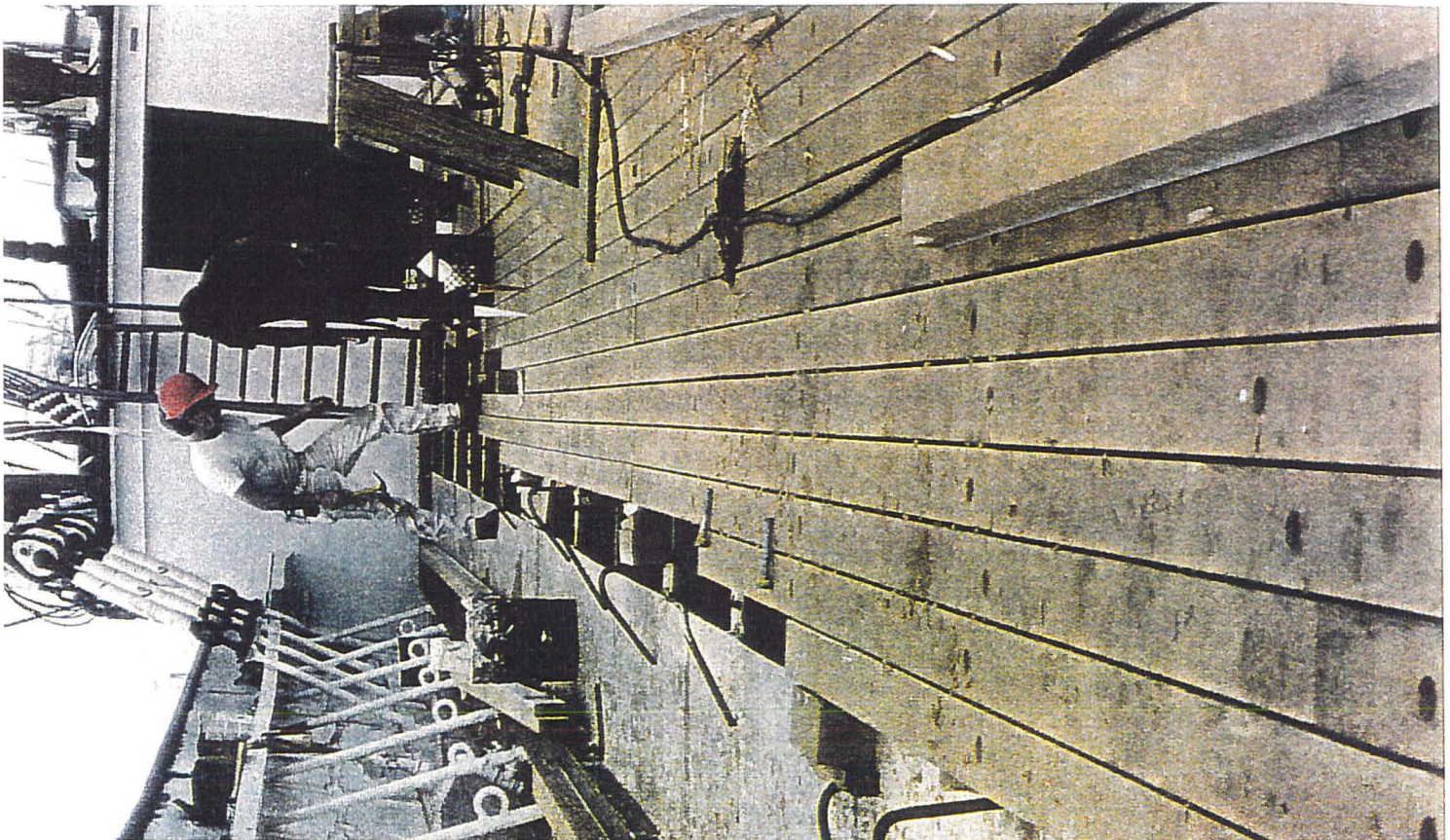
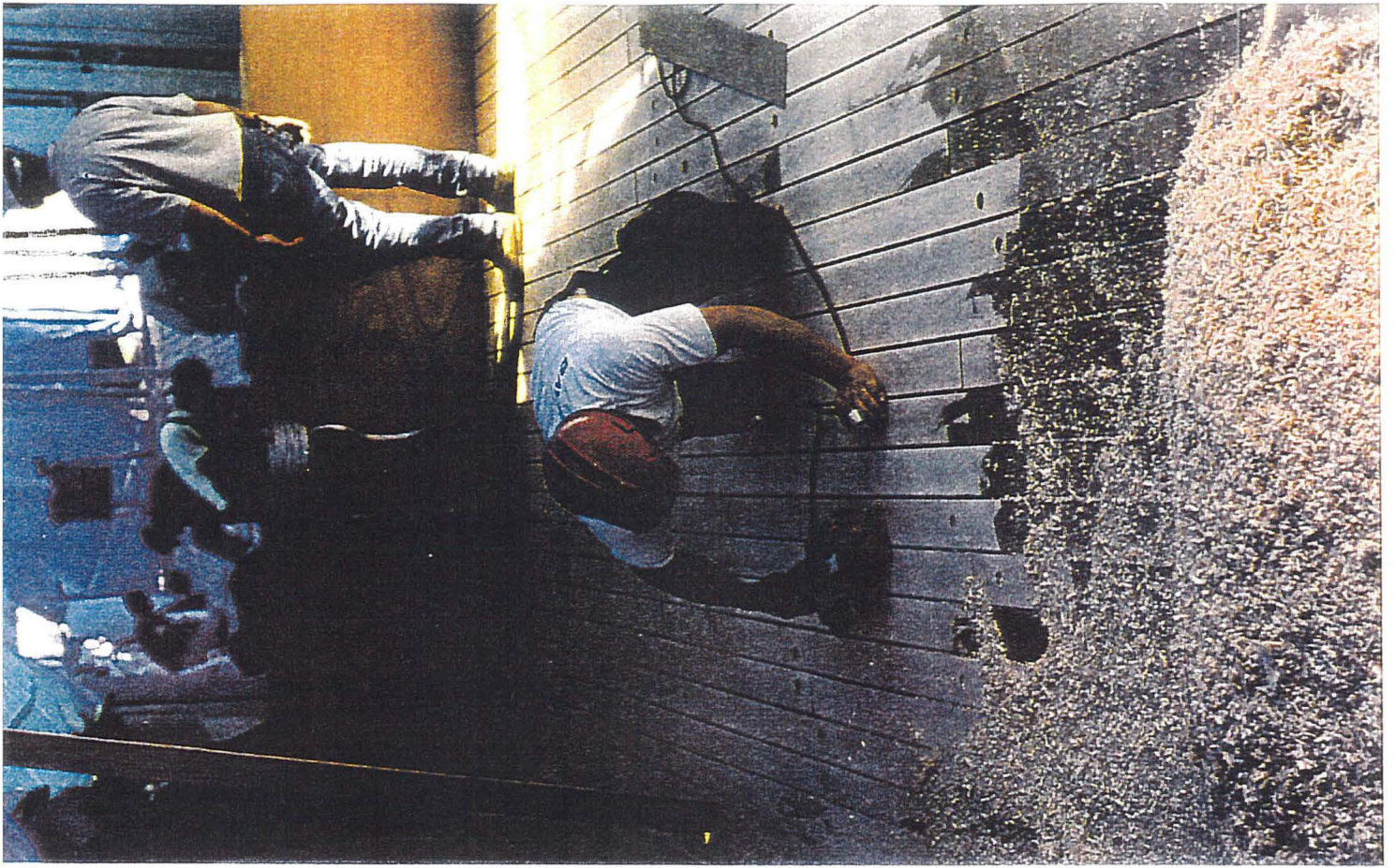


**Rebuilding the Main Deck.**

55 gallons of bedding compound and over 2500 galvanized deck bolts were used to rebuild the main deck. Once the deck planks were laid and bolted, the bolt holes were plugged with teak plugs and the deck surface was planed fair and sanded smooth. Shipwrights fairing the deck had to work around the riggers and painters and keep ahead of the caulking crew to complete the job.

Photographs by John Burns.







### **Traditional Caulking Techniques.**

A crew of experts in traditional caulking techniques was assembled from around the country. These master craftsmen hammered threads of cotton and oakum tight into each deck seam before sealing them over with hot pitch. The specialized mallets, irons and skills used are handed down from boss caulkers to green tradesmen.

Photographs by John Burns.







### **Sealing the Deck Seams with Hot Pitch**

The caulking seams were hammered down tight and then sealed over with boiling pitch. The traditional tar-like marine glue was shipped from England and heated to around 200 degrees Fahrenheit to facilitated workability of the viscous sealant.

Photographs by John Burns.





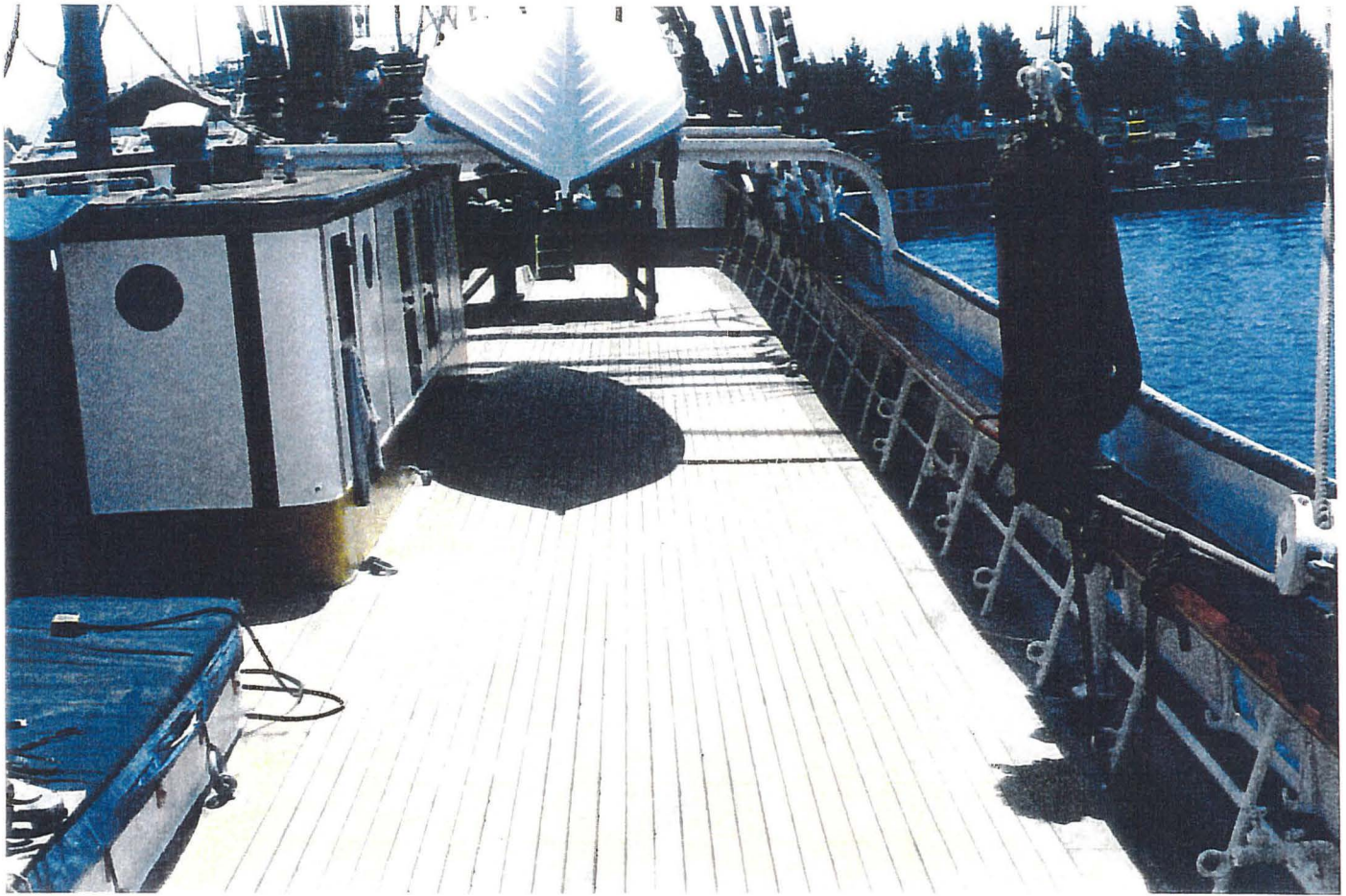


### **Scraping the Completed Deck Surface**

Once the deck was caulked and pitch laid, the entire main deck was hand scraped to achieve a smooth, uniform surface. A crew of workers carefully scraped off excess pitch and uneven tool marks from the deck planking.

Photographs by John Burns.





### **Preserving the Newly Laid Deck**

The newly completed main deck was treated with a wood preservative borate solution, bleached clean and then oiled twice with a mixture of linseed oil and turpentine. These treatments and regular periodic maintenance will help to preserve the wood and keep the deck watertight for years to come.

Photographs by John Burns.









**THE NATIONAL MARITIME MUSEUM ASSOCIATION**  
**Balclutha Deck Renewal Project**

**DAILY LOG**

This log is intended to be a daily record of the progress of the deck renewal project on the historic vessel Balclutha. This log is not a complete record of all work being performed concurrently by the shipyard for the National Park Service. The work is being done at Bay Ship & Yacht Co. in Alameda, California. The Project Manager for the Association is Anthony Carter, the Master Shipwright is John Burns and the Job Monitor responsible for this journal is Andy Foster.

**MONDAY, NOVEMBER 17, 1997**

The job foreman for Bay Ship & Yacht Co., Phil Lantz, said they are only working on removing interferences and building the containment which should take at least a week.

Phil also wanted to know when the lumber is going to arrive.

Today, two workers worked all day removing interferences, (7am-3:30pm).

Removed fasteners from flywheel pumps, removed main fife rails, put label tags on large ringbolts around main hatch.

Phil Lantz came and went throughout the day. Phil Lantz came by with someone and talked over the flywheel pumps for about 45 minutes.

Phil Lantz smashed his left hand under the main fife rail and broke the two middle fingers, one in five places.

**TUESDAY, NOVEMBER 18, 1997**

Two workers worked all day removing interferences.

Removed the awning cover over the main hatch stairway.

Removed fasteners of flywheel pump housings from below deck.

Removed starboard side flywheel pump housing-two of the four mounting bolt holes broke off at corners,(see photos #2 and #3 from film labeled, "Balclutha #1").

Phil Lantz was out all day today with broken fingers.

**WEDNESDAY, NOVEMBER 19, 1997**

Brought crane and extra crew in the morning to remove main deck interferences. There were up to seven workers on our project. Removed both shore boats. Removed spars and a shipyard gangway that was left on the main deck. Removed pig house.

In the afternoon there were four workers removing interferences.

Removed manhole aft of flywheel pump. Removed flywheel pump and freshwater pump.

Phil Lantz found a welded crack in port flywheel housing, will prepare a "condition found" report.

Removed pig house eyebolts, ventilator, forward fife rails, throughbolts from forward main deck bit on port side and eyebolts from around fore mast.

#### **THURSDAY, NOVEMBER 20, 1997**

Four workers worked all day removing interferences, deck planking and cleaning up after demolition and covering exposed steel with plastic sheeting.

Removed flywheel pump mounts.

Started pulling up deck planks around main mast.

Started removing ringbolts around main hatch.

Removed center section deck planks to inner margin boards from shelterdeck house to after end of midship house.

Drilled out center section wood plugs over deck bolts from forward end of midship house to around foremast.

Removed center section interferences from forward end of midship house to foremast.

Removed ringbolts from starboard side inner margin board around main hatch.

There was a meeting today with Project Manager Anthony Carter, Master Shipwright John Burns, Job Monitor Andy Foster, NPS Ships Manager Wayne Boykin, and NPS historian Steve Canright present. All present agreed on approval of short teak margin board layout.

#### **FRIDAY, NOVEMBER 21, 1997**

Two workers spent the morning cleaning up debris off the deck and covering the open steel with plastic from the shelterdeck house to after end of main hatch.

This afternoon two or three workers were working on the containment structure on the dock.

This morning NPS Rigger Steve Hyman and riggers hauled off lines, shackles and blocks.

#### **MONDAY, NOVEMBER 24, 1997**

Three workers on board all day cleaning the exposed steel deck plating inboard of steel waterways with safety absorbent.

Three workers on dock working on the containment structure.

Drilled out center section wood plugs over deck bolts from around foremast.

#### **TUESDAY, NOVEMBER 25, 1997**

Three workers on board removing center section deck planking from forward of midship house.

Two workers on dock working on the containment structure.

Removed center section deck planks from midship house to fore hatch.

This afternoon, four workers and foreman Phil Lantz removed deck planks from midship house to margin board at forcastle. Busy clearing and cleaning the deck of debris from removal of old decking.



### **WEDNESDAY, NOVEMBER 26, 1997**

At 7am, two workers were busy covering the opening in the deck forward of the midship house with plastic tarps to protect the exposed steel and the lower decks from the rains that started last night.

At around 9:30am this morning, there was a meeting with Project Manager Anthony Carter, Master Shipwright John Burns, Job Monitor Andy Foster and NPS historian Steve Canright present. Steve Canright approved of the proposed deck planking layout.

This morning, foreman Phil Lantz submitted to Anthony Carter a "condition found" report. In this report, Phil Lantz recommends to Bay Ship & Yacht Co. that Bay Ship & Yacht Co. authorize the installation of "weather protection." See attached report dated 11/25/97.

Four workers worked all day removing margin boards and deck planks.

Removed teak inner margin board at starboard side of main hatch from shelterdeck house to after end of midship house.

Removed teak inner margin board at port side of main hatch from shelterdeck house to after end of main hatch.

Removed teak margin boards from against forward end of shelterdeck house, from around main mast, from after end of main hatch, from after end of midship house and from forward end of main hatch.

Removed one full strake of fir deck planking outboard of teak inner margin board on starboard side from shelterdeck house to just three feet aft of after end of midship house.

Removed one strake of fir deck planking outboard of teak inner margin board on port side from shelterdeck house to less than one foot aft of after end of midship house.

Meeting this afternoon with Anthony Carter, John Burns, Foreman Phil Lantz and the CEO of Bay Ship & Yacht Co. Bill Elliot present. Discussed dispute over weather containment structure to no resolution.

### **MONDAY, DECEMBER 1, 1997**

This morning there were three workers removing ringbolt interferences from around the midship house and pulling up margin boards from around the starboard side of the midship house.

Removed teak margin boards from forward end of midship house and port side of midship house.

This afternoon there were five workers and the foreman on board removing teak margin boards and fir deck planking.

Removed teak margin boards from around fore mast and forward hatch.

Removed teak margin boards from against forecastle.

Removed teak margin boards and two outboard strakes of fir deck planking from port side of midship house, and from starboard side of midship house, except for one outboard deck plank on the starboard side from the foredeck ladder to forecastle. Also, have not yet pulled up forward bitts.

## **TUESDAY, DECEMBER 2, 1997**

This morning there were four workers on board installing the containment structure. There were also two workers cleaning up the wood removal from yesterday.

The center section deck planking was not completely taken up until just after noon today.

This afternoon there were five workers on board installing the framing for the containment structure and two workers cleaning up the exposed steel deck plating.

Meeting on board today with Anthony Carter, John Burns, Andy Foster, Bruce Vanvick of NPS and NPS historian Steve Canright all present. After walking through and surveying all the exposed center section underdeck steel, Steve Canright approved of the Underdeck Steel Work Statement, including work to be done to the forward hatch and the main hatch, as described in the Work Statement appendix to the Scope of Work Amendment.

## **WEDNESDAY, DECEMBER 3, 1997**

This morning there were two workers on board removing remaining deckbolts and clearing debris. There were five workers sorting out the framing for the containment structure. One welder started cutting out the port side steel waterway section damaged by corrosion.

Anthony Carter, Project Manager met with Bill Elliot, CEO of Bay Ship & Yacht Co. at 11:30am today to discuss the Scope of Work Amendment.

This afternoon foreman Phil Lantz said all of the deck bolts were out of the center section and collected for salvage. Phil Lantz also gave John Burns a copy of a "condition found" report which states Mr. Lantz's opinion that a higher percentage of salvageable deck bolts will likely be recovered from the starboard and port side deck sections. This opinion is based on observations thus far that the more serious corrosion has been concentrated in the center deck section.

All the frames of the containment structure have been erected and are being fastened together. It started raining by 2pm today without the containment covers installed. There are plastic tarps over the exposed center deck steel from the forecastle aft to the forward end of the midship house and from the after edge of the main mast aft to the shelterdeck house.

This afternoon Anthony Carter, John Burns and Bay Ship & Yacht CEO Bill Elliot met and walked through the center section of the main deck. At this meeting the three inspected and discussed the underdeck steel work described by the Work Statement for the Scope of Work Amendment.

#### **THURSDAY, DECEMBER 4, 1997**

This morning five workers and the foreman started installing the plastic covering over the framing of the containment structure.

Covered containment with plastic from the after end of foredeck to the after end of the main hatch.

CEO of Bay Ship & Yacht Co. Bill Elliot said that he needed more than the contractual twenty-four hours to come up with the bid price for the underdeck steel work proposed by the Work Statement for the Scope of Work Amendment. Project Manager Anthony Carter allowed Mr. Elliot an extension until Friday morning, December 5th to submit his bid for the steel work.

#### **FRIDAY, DECEMBER 5, 1997**

This morning five workers were on board working on the containment structure.

Anthony Carter and John Burns decided this morning to order two inch borate impel rods rather than spend time cutting the brittle four inch rods owned by the NPS.

Bay Ship & Yacht Co. informed Anthony Carter today that the borate treatment to the new deck planking material will be accomplished by spraying according to Association specifications.

This afternoon five workers and the foreman worked on securing the plastic covering over the containment structure which has not yet covered the main deck from the after end of the main hatch aft to the shelterdeck house.

#### **MONDAY, DECEMBER 8, 1997**

All day today five workers and the foreman were busy installing the plastic covering over the framing of the containment structure from the after end of the main hatch to the shelterdeck house.

One welder was cutting out the rusted steel section of the port side waterway.

#### **TUESDAY, DECEMBER 9, 1997**

All day today two workers were securing the plastic cover over the containment structure, which completely covered the main deck today.

One welder, with fire watch and another worker preparing surfaces with a needle gun, cut out more of the port side steel waterway.

Three workers pulled out all the deck bolts on the starboard side and started on the port side near the shelterdeck.

### **WEDNESDAY, DECEMBER 10, 1997**

This morning two workers were working on the plastic shrink wrap over the containment structure.

One welder, with fire watch and another worker with needle gun, were cutting out the after end of the starboard side steel waterway.

This afternoon four workers pulled deck planking and two welders with fire watches and one grinder worked on the starboard side steel waterway.

Two workers were pulling up deck bolts on the port side.

Removed douglas fir deck planking from starboard side main deck and started to remove deck planking from port side main deck at forward end of the midship house.

Removed deck bolts from port side main deck.

Grinded and spot welded on deck beams under port side waterway.

Covered starboard side deck beams with plywood sheets.

This afternoon four workers removed deck planking and two welders and a grinder with fire watches worked on the starboard side steel waterway.

Removed port side main deck planking from forecastle to forward end of quarterdeck ladder except for eight strakes running the entire length of the main deck.

### **THURSDAY, DECEMBER 11, 1997**

This morning two welders with fire watches and one grinder were working on the steel waterways. Three workers were removing the remaining port side deck planking.

John Burns, Anthony Carter and Andy Foster loaded the bulk of removed deck planking onto a rented truck and delivered to John Burns' shop for storage.

This afternoon two workers were building a work platform underneath the main hatch.

### **FRIDAY, DECEMBER 12, 1997**

This morning two welders with fire watches and one grinder were working on the steel waterways. The starboard side steel waterway was completely cut out. Four workers removed the hatch gratings from the forward hatch and the main hatch and one worker set up tools for hatch work.

Grinded down steel over every rivet in forward hatch and main hatch.

This afternoon two workers were building a work platform underneath the forward hatch.

#### **MONDAY, DECEMBER 15, 1997**

All day today there were two workers making a template for the port side steel waterway. One welder and one grinder with fire watches were working on the waterways. Two welders were removing rivets in the starboard side of the main hatch.

The teak delivered last week by Handloggers lumber supply was left uncovered during the rains this weekend.

This afternoon two workers were masking off the mizzen mast stays at the base of the main mast.

Removed rivets from main hatch on starboard and port sides, two and one half rows the entire length of hatch and started removing rivets fore and aft.

#### **TUESDAY, DECEMBER 16, 1997**

All day today there were two welders with fire watch removing rivets from the fore and aft ends of the main hatch. Two workers continued creating templates for the steel waterways. Three workers masked off rigging and varnished wood around the main deck in preparation for sandblasting, and one worker fitted plywood covers over the portholes of the midship house and the shelterdeck.

One welder on the dock cutting new steel waterway sections.

Removed port side forward corner tie flange from inside of main hatch.

Removed port and starboard side beam support tie plates from inside main hatch.

Removed starboard side forward corner tie flange from inside of main hatch.

#### **WEDNESDAY, DECEMBER 17, 1997**

This morning there were two workers building a work platform underneath the forward hatch. Three workers were on the dock cutting new steel waterway sections. Two workers were cutting out remaining rivets in the main hatch, and one worker continued to cover portholes with plywood all over the ship in preparation for sandblasting. Three workers were removing remaining fir deck planking from around the port and starboard side ladders to the quarterdeck.

Fitted first new steel waterway section at forecastle on port side.

This afternoon five workers were masking off the containment structure in preparation for sandblasting. Three workers and one welder with fire watch were working on the port side steel waterway. Two workers were on the dock cutting new steel waterway sections.

Removed all remaining rivets fastening the main hatch to the main deck flanges.

Fitted second new steel waterway section on port side.

The crane crew lifted up the entire main hatch and set it on deck on angle irons.



#### **THURSDAY, DECEMBER 18, 1997**

This morning four workers were fitting new steel waterway sections on the port side of the main deck. Three workers were masking off the main deck area in preparation for sandblasting. Two welders with fire watch were cutting out rivets in the forward hatch.

NPS Ship's Manager Wayne Boykin met this morning with Project Manager Anthony Carter. In this meeting, Wayne Boykin approved the decision to decline a Change Order proposed by Bay Ship & Yacht Co. which would have cost extra for the disassembly of the forward edge of the forward hatch, as an additional work item to the disassembly of both sides and the after edge as was already specified in the Scope of Work Amendment. Wayne Boykin agreed to leave the decision of whether or not to remove the forward hatch combing up to the discretion of the shipyard.

This afternoon there were two welders with fire watch removing rivets, three workers fitting new steel waterway sections, and three workers masking off the main deck. Fitted third and fourth new steel waterway sections on port side and number seven section.

Fitted number six section of new steel waterway section on starboard side.

Removed rivets from port and starboard sides and from after end of forward hatch.

Master Shipwright John Burns submitted Change Orders recommending removal of two corner brackets at deck beam #23, port side at intersection of carlin beam, add new weld beads to previous repair, grind flush, blast and coat as per specifications. A second Change Order recommended removing inner face of deformed plate on the inside face of aft plate of main hatch combing, blast and glaze and coat to make fair.

Note: Deck beam numbers refer to the main deck only. Main deck beam sequence starts at deck beam #1 at break of raised foredeck and continues aft sequentially to deck beam #30 at break of shelterdeck bulkhead.

#### **FRIDAY, DECEMBER 19, 1997**

All day today there were three workers masking off the main deck area and below decks in preparation for sandblasting. Two workers with fire watch were fitting the new steel waterway sections on the port side and one welder was on the dock cutting new steel waterway sections.

Foreman Phil Lantz left this morning for Seattle, Washington for a week. Mike from Bay Ship & Yacht will be in charge during Phil Lantz' absence.

It was a short work day today because Bay Ship & Yacht Co. had a mandatory meeting today at 2:30pm for all employees.

Fitted number five new steel waterway section in port side.

**MONDAY, DECEMBER 22, 1997**

All day today five workers were masking off the main deck area and below decks in preparation for sandblasting. Two workers were on the dock cutting new steel waterway sections. The foreman Mike freed up three sides of the forward hatch.

Fitted new steel waterway sections five, six and eight to complete the port side waterway fittings. Fitted sections one, two, three, four, six, seven and nine of the starboard side waterway.

**TUESDAY, DECEMBER 23, 1997**

All day today there were three workers masking off the main deck area and belowdecks and stringing up lights in preparation for sandblasting. Two welders were fitting the last sections of new steel waterway on the starboard side. NPS historian Steve Canright came by today and dropped off the photo proof sheets for rolls #2 and #3.

**WEDNESDAY, DECEMBER 24, 1997**

This morning there were five workers and a crane to hoist the three sides of the forward hatch. The port, starboard and after hatch combings were hoisted out separately and set on deck on angle irons.

Four workers were masking off belowdecks in preparation for sandblasting. Two workers were fitting new steel waterway sections in the starboard side.

Today was only a half day of work for the shipyard due to the holiday.

**MONDAY, DECEMBER 29, 1997**

This morning there were five workers masking off the main deck area and belowdecks in preparation for sandblasting and one welder disassembling the main hatch and the forward hatch.

Foreman Phil Lantz returned to work today after a week long holiday.

Three workers were on the dock assembling the sandblasting equipment and containment structure.

**TUESDAY, DECEMBER 30, 1997**

This morning there were six workers on board masking off the main deck area and assembling the sandblasting equipment and containment structure.

This morning there was a disagreement with Bay Ship & Yacht Co. CEO Bill Elliot over whether or not the contract work already agreed to covered the sandblasting and coating of six to eight inches inboard of the steel waterways on both the port and starboard sides. Fred Sheppard of NPS decided that he would pay the difference to have the disputed area sandblasted and coated.

Sandblasting started today with three workers blasting and three handlers. Handlers vacuum grit, move plywood and help move and handle hoses. Sandblasting also involves two or three support staff every day.

**WEDNESDAY, DECEMBER 31, 1997**

All day today there were three workers sandblasting and three handlers and three support staff.

Thursday the shipyard will be closed for the holiday.

**FRIDAY, JANUARY 2, 1998**

All day today there were three workers sandblasting and three handlers and three support staff.

**SATURDAY, JANUARY 3, 1998**

All day today there were three workers sandblasting and three handlers and three support staff

**MONDAY, JANUARY 5, 1998**

All day today there were three workers sandblasting, three handlers and two workers preparing the next area to be sandblasted. Two workers were working on the containment structure, one worker as support staff and one worker on the dock as fire watch.

**TUESDAY, JANUARY 6, 1998**

All day today there were three workers sandblasting and three handlers.

**WEDNESDAY, JANUARY 7, 1998**

All day today there were three workers sandblasting and three handlers.

**THURSDAY, JANUARY 8, 1998**

All day today there were three workers sandblasting and three handlers.

**FRIDAY, JANUARY 9, 1998**

All day today there were three workers sandblasting and three handlers.

During the lunch hour, an inspection team went on board to view the sandblasted steel prior to painting. Present at the inspection were Bay Ship & Yacht Co. Foreman Phil Lantz, AC&S Lead Abatement Supervisor Dennis Brown, Devoe paint representative Kurt Mensing, Project Manager Anthony Carter, Master Shipwright John Burns and Job Monitor Andy Foster. Devoe paint representative Kurt Mensing approved of the condition of the sandblasted steel as adequate preparation for applying the Devoe anti-corrosive paint.

**SATURDAY, JANUARY 10, 1998**

All day today there were five workers cleaning up sand from sandblasting in preparation for painting.

### **MONDAY, JANUARY 12, 1998**

All day today there were six workers cleaning up sand from sandblasting in preparation for painting.

This afternoon Foreman Phil Lantz said they were ready to paint the midship house, the main hatch opening and assorted other areas that were not affected by rainy weather.

At 3pm today, Master Shipwright John Burns and Job Monitor Andy Foster made an inspection of recently sand swept steel prior to painting. There were areas that were still wet and some remaining scale but the areas to be painted were swept clean and dry.

The margin plates on the port side of the main hatch combing had not yet been sandblasted. The fore hatch had some scale remaining. The after edge of deck beam #30 will not be sandblasted but will be mechanically de-scaled with needle guns.

Devoe paint representative Kurt Mensing was scheduled to be present for the steel inspection today but did not show up.

Late this afternoon the first coat of primer was painted on the sides of the midship house and the main hatch opening.

### **TUESDAY, JANUARY 13, 1998**

This morning there were three handlers and three workers sandblasting the deck beams and bulkheads again in preparation for painting.

Two workers cleaned up sand from sandblasting in preparation for painting.

This afternoon there were three workers cleaning up sand from sandblasting and one worker spraying primer on the deck beams and bulkheads.

At 3pm this afternoon, Master Shipwright John Burns went on board to inspect the steel preparation and painting. The main hatch and the fore hatch have been painted with one coat of primer. Around one quarter of the deck beams' landing surfaces have been painted with one coat of primer. There was a small area of scale remaining on the main hatch and another small area of scale remaining on the fore hatch. There was an area that has not yet been sandblasted on the underside of the outer margin deck plates on the starboard side of the forward bunk room below the main deck.

### **WEDNESDAY, JANUARY 14, 1998**

All day today there were six workers cleaning up and serving as equipment support for the one paint sprayer.

At noon today, Master Shipwright John Burns and Job Monitor Andy Foster went on board to inspect the steel preparation and first coat of primer.

The inside edge of the hull plating one deck below the main deck level on the port side was coated with the first coat of primer from the shelterdeck bulkhead aft. The main hatch and the fore hatch were coated with the first coat of primer. The forward facing side of the shelterdeck bulkhead was coated with the first coat of primer. The deck plating around the main mast and aft to the shelterdeck bulkhead was coated with the first coat of primer.



**THURSDAY, JANUARY 15, 1998**

All day today there were six workers on board securing leaks in the containment structure and cleaning up sand from sandblasting in preparation for painting.

Just before noon today, Master Shipwright John Burns and Job Monitor Andy Foster went on board and marked with spray paint areas of underdeck steel work to be repaired.

Devoe paint representative Kurt Mensing said he would be on board on Monday around 10am for an inspection of the painting conditions.

**FRIDAY, JANUARY 16, 1998**

All day today there were three workers sandblasting, three handlers and two workers cleaning up sand in preparation for painting.

At 3pm this afternoon, Master Shipwright John Burns went onboard to inspect the paint preparation. This evening four workers stayed overtime for painting.

**SATURDAY, JANUARY 17, 1998**

This morning there were three workers sandblasting and three handlers.

This afternoon four workers were cleaning up sand from sandblasting in preparation for painting. One worker was spraying primer.

**MONDAY, JANUARY 19, 1998**

All day today there were six workers on board cleaning up sand from sandblasting and removing the sandblasting equipment.

At around 10:30am today, Devoe paint representative Kurt Mensing came by to make an inspection of the first coat of primer. Present for the inspection with Kurt Mensing were Project Manager Anthony Carter and Job Monitor Andy Foster. Kurt Mensing said that the average thickness of paint applied was adequate; that there were areas of bare steel yet to be coated; that there were areas of steel disturbed by sandblasting that need to be prepared for painting; and that there were significant areas that will need to be hand striped.

**TUESDAY, JANUARY 20, 1998**

All day today there were five workers on board cleaning up sand from sandblasting.

**WEDNESDAY, JANUARY 21, 1998**

All day today five workers were cleaning up sand from sandblasting.

**THURSDAY, JANUARY 22, 1998**

All day today there were seven workers on board cleaning up sand from sandblasting.

**FRIDAY, JANUARY 23, 1998**

All day today there were seven workers on board cleaning up sand from sandblasting.

#### **MONDAY, JANUARY 26, 1998**

This morning there were three workers setting up plywood walkways and safety stanchions on the main deck and two workers setting up welding equipment for steel work on deck beams. Two workers were cleaning up sand from sandblasting.

Foreman Phil Lantz said that Bay Ship & Yacht Co. now has 78 tons dry weight of lead contaminated aggregate grit from sandblasting.

This afternoon three workers disassembled the sandblasting containment structure. Two welders cut out and replaced the corroded steel section at the starboard side after end corner of the main hatch.

#### **TUESDAY, JANUARY 27, 1998**

All day today there were five workers on board cleaning up sand from sandblasting and disassembling the sandblasting containment structure.

At 10am this morning NPS Historian Steve Canright met with Master Shipwright John Burns to discuss the proposed steel repairs. Steve Canright approved of glazing with Red Hand or other approved substitute the four to six inches up from the deck level to cover all pitted areas on all main deck structures including around the main hatch, around the forward hatch and around the midship house. Steve Canright approved of the removal and refabrication of the corroded area of the tonnage documentation numbers inscribed on the inside after edge of the main hatch; approved of the proposed foremast collar repair using 5/16" steel plate liner welded to the inside of the foremast collar; and agreed to the slacking off of the main mast backstay so as to allow for deck beams to settle back into normal position. Steve Canright also found acceptable the state of the deck beams vertical surfaces having been affected by sandblasting but not uniformly sandblasted to SSPC SP6 prior to painting.

#### **WEDNESDAY, JANUARY 28, 1998**

All day today there were five workers on board cleaning up sand from sandblasting and disassembling the sandblasting containment structure. One welder was working on the main hatch steel repair and two welders were starting on the underdeck steel repairs at the deck beams around the forward hatch.

At around noon today, Devco paint representative Kurt Mensing came on board and said that he did not find any painted surfaces so far that appeared to be painted over wet surfaces, and that he did find some areas where the paint was peeling due to having been applied over unprepared surfaces.

Master Shipwright John Burns met with Foreman Phil Lantz for a thorough inspection and discussion of all the underdeck steel repairs. Phil Lantz said that he understood and agreed to all the proposed repairs.

Master Shipwright John Burns estimated that the main deck renewal project would require between 7500 and 10,000 lineal feet of caulking seam, and that eight cubic feet of pitch would be sufficient.

At 2pm today, Bruce Vanvick from NPS said that the welds were cracking on the steel repair patch on the starboard side after end corner of the main hatch. Foreman Phil Lantz was alerted and the welder responsible was instructed to grind out the seams and re-weld.

#### **THURSDAY, JANUARY 29, 1998**

This morning there were four workers cleaning up sand from sandblasting and disassembling the sandblasting containment structure. One welder was finishing and painting over the steel repair patch at the starboard side after end corner of the main hatch. Two welders were working on repairs to the deck beams around the forward hatch. This afternoon there were three welders working on the steel repairs to the deck beams around the forward hatch and four workers cleaning up sand from sandblasting and painting steel at the tween decks.

#### **FRIDAY, JANUARY 30, 1998**

All day today there were three welders working on the steel repairs to the deck beams around the forward hatch. One worker was glazing with epoxy filler the pitted areas around the base of the midship house and four workers were cleaning up sand from sandblasting and disassembling the sandblasting containment structure.

At around 9am this morning, Master Shipwright John Burns compared the height of deck beam #6 with the height of the surrounding deck beams and found that deck beam #6 has raised up between 7/8" and 1 1/4".

This morning there was a meeting on board. Present at this meeting were NPS Ship's Manager Wayne Boykin, NPS Rigger Steve Hyman, NPS Contract Officer Fred Sheppard, Project Manager Anthony Carter, Master Shipwright John Burns and NPS Historian Steve Canright. All present at this meeting agreed to try to bring deck beam #6 level with the surrounding deck beams by pulling from the lower decks with a one ton chain fall.

Bay Ship & Yacht Co. started transporting the fir decking material from outside their warehouse to the dock alongside the ship. Master Shipwright John Burns requested that Foreman Phil Lantz provide plastic covering for the fir decking material that would completely cover all the wood, including the ends which have been exposed to the weather.

Project Manager Anthony Carter complained to Foreman Phil Lantz that the welders working on the deck beam repairs were working with insufficient fire watch.

This afternoon there were three workers hand-stripping primer on areas at the tween deck.

#### **MONDAY, FEBRUARY 2, 1998**

This morning there were three welders and two fire watch working on the underdeck steel repairs around the foremast area. Two workers were patching up leaks in the containment structure and two workers were cleaning up sand from sandblasting.

One worker started glazing with epoxy filler the pitted areas at the base of the shelterdeck bulkhead.

This afternoon there were three welders working on the underdeck steel repairs. Three workers were hand-stripping primer on vertical surfaces of deck beams and two workers were preparing surfaces for painting with wire brushes.

#### **TUESDAY, FEBRUARY 3, 1998**

This morning Foreman Phil Lantz announced that there would be no work today due to heavy rain and wind and the absence of welders.

Foreman Phil Lantz and Bruce Vanvick from NPS tried to pull deck beam #6 down with chain hoists pulling from the deck below the main deck.

#### **WEDNESDAY, FEBRUARY 4, 1998**

This morning there were three welders and one fire watch working on the underdeck steel repairs around the starboard side of the midship house. Two workers were belowdecks cleaning up sand from sandblasting and two workers were disassembling the sandblasting containment structure.

This afternoon there were three welders and one fire watch working on the underdeck steel repairs. Two workers were assisting the steel repairs by hammering out old rivets and grinding down cut steel. Two workers were below cleaning up sand from sandblasting.

#### **THURSDAY, FEBRUARY 5, 1998**

All day today there were four welders and one fire watch working on the underdeck steel repairs. Four workers were preparing areas on the bulwarks at the tween deck for hand-stripping with white primer.

This afternoon three workers continued stripe coating areas on the bulwarks at the tween deck with white primer.

#### **FRIDAY, FEBRUARY 6, 1998**

All day today there were four welders and one fire watch working on the underdeck steel repairs along the starboard side of the main deck. Two workers were stripe coating areas at the tween deck with white primer and two workers were on the dock disassembling the containment structure for the fore mast.

#### **MONDAY, FEBRUARY 9, 1998**

All day today there were four welders and one fire watch working on the underdeck steel repairs around the main hatch. One worker was cleaning up exposed steel with a needle gun in preparation for painting. One worker was stripe coating areas at the tween deck with white primer. Two workers were cleaning up sand from sandblasting.

Two riveters were preparing to begin riveting this week.

This afternoon one worker patched up the weather containment structure. Two workers were stripe coating areas at the tween deck and one worker was stripe coating areas on the vertical surfaces of the deck beams.



#### **TUESDAY, FEBRUARY 10, 1998**

This morning there were three welders working on the underdeck steel repairs. Two workers were cleaning exposed steel with needle guns. Two workers were stripe coating areas at the tween deck with white primer. One worker was drilling out rivet holes in preparation for riveting. Two riveters were preparing to begin riveting. One worker was cleaning up sand from sandblasting.

This afternoon there were four workers stripe coating areas at the tween deck with white primer. One worker was cleaning up sand from sandblasting. Four riveters were testing out rivets and riveting. Two welders were working on the underdeck steel repairs.

#### **WEDNESDAY, FEBRUARY 11, 1998**

This morning there were two welders working on assembling the forward hatch and two welders with fire watch repairing a section of corroded steel deck plating just forward of the shelterdeck bulkhead. Two workers were stripe coating areas at the tween deck with white primer. Four riveters were preparing for riveting. Two workers were on the dock building a new weather containment structure for the fore mast.

This afternoon there were two welders and one worker bolting the sides of the forward hatch in place in preparation for riveting. Four workers were on the dock assembling the new weather containment structure to cover half of the fore mast. One welder was fitting the new section of deck plating just forward of the shelterdeck bulkhead. One welder was fabricating a new section of flange for deck beam #30. Four riveters were riveting and cutting out rivets that did not set correctly. Two workers were stripe coating areas on the vertical surfaces of the deck beams with white primer.

#### **THURSDAY, FEBRUARY 12, 1998**

All day today there were four welders working on the underdeck steel repairs and the main hatch. Three workers were stripe coating areas on the vertical surfaces of the deck beams with white primer. One worker was patching up the weather containment structure and one worker was preparing a new steel section of flange with a needle gun. Four riveters were preparing for riveting and riveting.

This afternoon the sides of the main hatch were lowered back into place and bolted.

#### **FRIDAY, FEBRUARY 13, 1998**

This morning there were two welders working on the main hatch, two welders working on the underdeck steel repairs and one welder working on the forward hatch.

Three workers were stripe coating areas on the vertical surfaces of the deck beams with white primer. One worker was preparing exposed steel surfaces with a needle gun. Four riveters and one worker were preparing for riveting and riveting the deck plate around the fore mast.

One welder started working on the waterways this morning.

Rich Ventresco, the Shipwright for Bay Ship & Yacht Co., started milling some of the teak pieces in preparation for fitting margin boards.

This afternoon four riveters and one worker riveted the sides of the forward hatch to the deck plate flanges.

#### **TUESDAY, FEBRUARY 17, 1998**

All day today there were three welders with one fire watch working on the port side steel waterway repairs. Two workers were on the dock working on the weather containment structure for the fore mast. Four riveters were preparing for riveting and riveting the sides of the forward hatch. The Shipwright Rich Ventresco and one worker were on the dock preparing the teak stock for laying out the margin boards. Two workers were preparing steel surfaces on the waterways with a needle gun and a grinder. One welder was fitting a new steel section of flange by drilling rivet holes.

#### **WEDNESDAY, FEBRUARY 18, 1998**

All day today there were four welders with one fire watch working on the port and starboard side waterways. Two workers were on the dock working on the weather containment structure for the fore mast. Four riveters and one worker were riveting the sides of the forward hatch. The Shipwright Rich Ventresco and one worker were on the dock organizing the teak stock and cutting lap joints into fir deck planking. Two workers were preparing surfaces on the steel waterways with a needle gun and a grinder.

This afternoon one worker was fairing the glazing on the midship house with a sander and coating the faired surfaces with primer.

#### **THURSDAY, FEBRUARY 19, 1998**

This morning there were four welders with fire watch working on the port side steel waterway. Three workers were preparing and fitting new steel waterway inserts. Four riveters and one worker were riveting the sides of the forward hatch. One worker was fairing the glazing on the midship house with an orbital sander and another worker was repairing leaks in the weather containment structure.

At around 9:30am this morning, Master Shipwright John Burns delivered three pieces of teak from Handlogger's to the dockside wood storage.

NPS Historian Steve Canright came by this morning and said that he was not satisfied with the rivets in the forward hatch and that the main hatch corners will no longer fit tight since the repairs knocked out all the scale which had bent the beams.

#### **FRIDAY, FEBRUARY 20, 1998**

All day today there were four welders with fire watch working on the port and starboard side steel waterways. Three workers were preparing and fitting new steel waterway inserts. Four riveters and one worker were riveting the sides of the main hatch.

#### **MONDAY, FEBRUARY 23, 1998**

All day today there were four welders with fire watch and three fitters working on the port and starboard side steel waterways. Four riveters and two workers were riveting the sides of the main hatch.

This morning, Bruce Vanvick of NPS told foreman Phil Lantz that he was not satisfied with some of the ring welds around rivets along the after end of the port side waterways, and for the welder to grind out the welds and weld around the rivets over again.

All day today Shipwright Rich Ventresco was on the dock cutting and milling pieces of greenheart for the fore mast

This afternoon one worker started grinding from below the 4'x4' new steel deck plate at the shelterdeck bulkhead in preparation for painting.

#### **TUESDAY, FEBRUARY 24, 1998**

All day today there were six welders working on the port and starboard side steel waterways. Five riveters and one worker were riveting the sides of the main hatch. Two workers were preparing and fitting new steel waterway inserts. One worker was grinding the new steel deck plate at the shelterdeck bulkhead in preparation for painting.

There was a meeting on board this morning between NPS Historian Steve Canright, Foreman Phil Lantz and Master Shipwright John Burns. The three men examined the new rivets in the forward hatch and came to a consensus as to which new rivets were unacceptable as well as to what constitutes an acceptable rivet.

This afternoon one worker was stripe coating along the riveted edge at the top of the midship house with primer. The margin plate along the forecastle bulkhead was also stripe coated with primer. One worker was grinding down the top of the new steel forward and after flanges on the starboard sides of deck beam #27.

#### **WEDNESDAY, FEBRUARY 25, 1998**

All day today there were four welders with fire watch working on the port and starboard side steel waterways. Two welders were working on the underdeck steel repairs. Four riveters and one worker were riveting the sides of the main hatch. Two workers were repairing the weather containment structure and fitting the new steel waterway inserts. One worker was glazing the vertical landing surfaces on the deck plating at the forecastle and shelterdeck bulkheads.

This afternoon the riveters started riveting the new steel repair to the forward flange of deck beam #30 at the shelterdeck bulkhead.

This afternoon Bruce Vanvick of NPS told Foreman Phil Lantz that he was not satisfied with the welds produced by one welder working on the steel waterways and that those welds would have to be done over again.

#### **THURSDAY, FEBRUARY 26, 1998**

All day today there were four welders with fire watch and four workers preparing and fitting the new steel waterway inserts. Two welders were working on the underdeck steel repairs and the repairs to the main hatch. Four riveters and one worker were riveting the new steel repair to the forward flange of deck beam #30 at the shelterdeck bulkhead. Two workers were on the quarterdeck assembling a containment barrier around the rails to protect the quarterdeck from sandblasting on the hull during drydock.

This afternoon Master Shipwright John Burns told the riveters that all the rivets along the new section of flange at deck beam #30 were backwards and would have to be burned out and done over again.

This afternoon two workers started painting the fore mast with primer.

#### **FRIDAY, FEBRUARY 27, 1998**

All day today there were four riveters and one worker working on removing and replacing a row of rivets in the forward flange of deck beam #30 and on other sections of flange repairs. Three welders with fire watch and one fitter were working on the steel waterways. One welder was working on the new steel inserts to the fore mast collar. Two welders were working on repairs to the main hatch. Two workers were on the dock painting the fore mast with top coat enamel. Two workers were assembling the sandblasting containment structure around the quarterdeck.

This morning there was a meeting on board with NPS Ships Manager Wayne Boykin, Project Manager Anthony Carter, Master Shipwright John Burns, Foreman Phil Lantz and Job Monitor Andy Foster all present to inspect and discuss the condition of the riveting. At around 9am this morning NPS Historian Steve Canright met with Master Shipwright John Burns to inspect and discuss the riveting. NPS Historian Steve Canright found the riveting work to be acceptable and agreed with Master Shipwright John Burns' evaluation and approval of all rivet work.

#### **MONDAY, MARCH 2, 1998**

All day today there were two welders with fire watch working on repairs to the main hatch. One welder was working on the new steel waterways on the starboard side and one welder was working on the new steel inserts to the fore mast collar. Four riveters and one worker were riveting new sections of flange to deck beams around the main hatch. Four workers were preparing and fitting new steel waterway sections. Two workers were assembling the sandblasting containment structure around the foredeck.

This afternoon Master Shipwright John Burns submitted to Foreman Phil Lantz a Worksheet of Steel Work Yet to be Completed, detailing the underdeck steel repairs and hatch work that is left to be done before laying deck planking.



### **TUESDAY, MARCH 3, 1998**

All day today there were two welders with fire watch working on the starboard side steel waterways. Two workers were preparing and fitting new steel waterway inserts. One welder was working on the new steel inserts to the fore mast collar. Two welders were working on repairs to the main hatch. Four riveters and one worker were riveting the port side steel waterways. Two workers were on the dock working on the wood planer. One worker was on the dock preparing the fore mast and yards for another coat of enamel. This morning Foreman Phil Lantz said that he had read the Worksheet of Steel Work Yet to be Completed that was submitted to him yesterday.

This morning NPS Historian Steve Canright met with Master Shipwright John Burns on board the ship. Steve Canright approved of the work being done to make the deck beams supporting the ends of the main hatch fit tighter. Steve Canright also approved of the rivet work and of the rivets being ground flush on the forward hatch combings. Steve Canright spoke with NPS Contract Officer Fred Sheppard who decided to authorize payment for a change order to repair the corrosion problems at the port side outer margin plate at deck beam #5.

This afternoon a group of workers hauled aboard an 18 foot section of new bulwark gunnel rail for the starboard side after end of the main deck. Two workers spent the afternoon fitting the new section.

This afternoon Master Shipwright John Burns and Project Manager Anthony Carter each expressed their concerns to Foreman Phil Lantz regarding Bay Ship & Yacht Co.'s decision to replace Shipwright Rich Ventresco with Ron Romero, an individual with unproven qualifications. Phil Lantz responded that the decision was beyond his control.

### **WEDNESDAY, MARCH 4, 1998**

All day today there were four welders working on the steel waterways. One welder was working on the new section of bulwark gunnel rail on the starboard side. Four riveters and one worker were riveting the port side steel waterways. One welder was fitting the new section of flange at deck beam #21 on the port side. Three workers were on the dock repairing the fore mast and preparing the yards for painting. One worker was working on repairs to the main hatch.

### **THURSDAY, MARCH 5, 1998**

All day today there were three welders with fire watch working on the steel waterways. Three workers were grinding and cleaning the weld beads at the port and starboard steel waterways. Two welders and one worker were working on repairs to the main hatch. One worker was adding glazing to the shelterdeck bulkhead. Four riveters and one worker were riveting the starboard side new steel waterways.

This morning Master Shipwright John Burns met with Devoe paint Representative Kurt Mensing. Kurt Mensing said that the top coat enamel needs to be applied within twenty four hours of applying the last coat of Devoe 235 primer. Kurt Mensing also said that the enamel can take two to three weeks to dry where it is fifty degrees Fahrenheit or colder. For accelerated drying time, Kurt Mensing advised adding Jap Dryer to the enamel and using heaters to warm the interior of the ship.

#### **FRIDAY, MARCH 6, 1998**

All day today there were two welders with fire watch working on the steel waterways. One welder was burning out rivets in the forward hatch. Four riveters and one worker were riveting the starboard side waterways. Two workers were grinding and preparing the waterways for painting with primer.

This afternoon the riveting crew were riveting the main hatch.

#### **MONDAY, MARCH 9, 1998**

All day today there were two workers working on repairs to the main hatch. One welder was working on underdeck steel repairs around the forward hatch. Two workers were grinding down weld beads on the port and starboard side waterways. Four riveters and one worker were riveting deck beams around the main hatch. One worker was fairing in the glazing on the shelterdeck bulkhead.

Two workers used a hydraulic jack to straighten stanchions.

#### **TUESDAY, MARCH 10, 1998**

All day today there were four riveters and one worker riveting deck beams around the main hatch. Two welders were working on underdeck steel repairs around the main hatch. Three workers were grinding down weld beads underneath the steel waterways. Two workers were on the dock preparing the teak margin boards layout. This afternoon three workers were glazing, fairing and painting over weld beads underneath the steel waterways.

#### **WEDNESDAY, MARCH 11, 1998**

All day today there were three riveters and one worker riveting the main hatch. One welder and one worker were cutting out bad rivets. One worker was preparing deck plating aft of the forward hatch with a needle gun. Two workers were grinding weld beads fair. Two workers were on the dock cutting teak margin boards.

This afternoon three workers were cleaning and spot painting areas on the deck beams with primer in preparation for painting this weekend. One welder was cutting out rivets in the deck beams along the starboard side of the midship house.

#### **THURSDAY, MARCH 12, 1998**

All day today there were four riveters and one worker riveting the main hatch. One worker was glazing around the base of the forward hatch and the main hatch. Three workers were cleaning and spot painting areas around the main deck in preparation for painting this weekend. At around 10am this morning the crane was brought alongside the ship and the crane crew and four workers loaded two piles of lumber for the main deck planking onto the poop deck.

This afternoon four workers were grinding rivet heads fair on the main hatch.

**FRIDAY, MARCH 13, 1998**

All day today there were three riveters and two workers riveting the main hatch. Three workers were grinding rivet heads fair on the forward hatch and the main hatch. One worker was fairing in glazing around the forward hatch.

**SATURDAY, MARCH 14, 1998**

All day today there were four workers painting the main deck area with white primer. Two workers spraying and two supporting.

**SUNDAY, MARCH 15, 1998**

All day today there were four workers painting the main deck area with white top coat. Two workers spraying and two supporting.

**MONDAY, MARCH 16, 1998**

This morning there were four workers riveting the forward hatch. Two workers were painting out the trim around the main deck area, and two workers were cleaning up the masking from last weekend's spray painting.

**TUESDAY, MARCH 17, 1998**

This morning there were five workers riveting deck beams around the forward hatch. Two workers were cleaning up masking and overspray from last weekend's spray painting and two workers were painting out the trim in black. This afternoon one welder was working on underdeck steel repairs around the starboard side of the midship house.

**WEDNESDAY, MARCH 18, 1998**

At 6:50am this morning the Balclutha left the dock assisted by two tugboats. At 10:30am this morning the ship was out of the water in the drydock. This afternoon the hull was powerwashed clean.

**THURSDAY, MARCH 19, 1998**

This morning a crew of drydock workers were securing lead abatement containment over the hull and drydock in preparation for sandblasting. Four workers were riveting deck beams around the port side of the main hatch. Two workers were securing new safety lines around the main deck area and two workers were securing lead abatement containment. This afternoon the bottom of the ship was sandblasted.

**FRIDAY, MARCH 20, 1998**

This morning there were nine workers on board securing the lead abatement containment structures around the main deck area. This afternoon the bottom of the ship was sandblasted and primed in spots.

**SATURDAY, MARCH 21, 1998**

Six workers secured the sandblasting containment all day Saturday.

**MONDAY, MARCH 23, 1998**

This morning there were six workers securing the sandblasting containment around the main deck area.

This afternoon the port side of the hull above the waterline was sandblasted.

**TUESDAY, MARCH 24, 1998**

This morning the port side of the hull was surveyed for repairs and ultra sonic readings were taken.

This afternoon the port side of the hull was painted.

**WEDNESDAY, MARCH 25, 1998**

This morning the starboard side of the hull was sandblasted. On the dock the fore mast and spars were being sandblasted inside a containment structure.

**THURSDAY, MARCH 26, 1998**

This morning the starboard side of the hull was surveyed for repairs and ultra sonic readings were taken.

This afternoon the starboard side of the hull was painted.

**FRIDAY, MARCH 27, 1998**

This morning the drydock crew was securing the sandblasting containment structure over the bowsprit. Six workers were on board cleaning up sand from sandblasting. A technician continued to take ultrasonic readings on the starboard side of the hull.

**MONDAY, MARCH 30, 1998**

This morning the drydock crew was securing the sandblasting containment over the bowsprit. Four workers were on board cleaning up sand from sandblasting. A technician was taking ultrasonic readings on the hull above the waterline. NPS contract officer Fred Sheppard began to survey the hull for steel repair work. The welding crew began working on the steel repairs to the hull and the rudder.

**TUESDAY, MARCH 31, 1998**

Today the drydock crew sandblasted the bowsprit and painted the bowsprit with primer. The welders worked on the steel repairs to the hull and rudder. One worker started to cut teak margin boards. A crew of workers started to clean up sand and containment from sandblasting.

**WEDNESDAY, APRIL 1, 1998**

Today the drydock welding crew was working on the steel repairs to the hull and the rudder. One worker started to fit teak margin boards. A crew of workers were disassembling the containment structure and cleaning up sand from sand from sandblasting.



#### **THURSDAY, APRIL 2, 1998**

Today a crew of workers were disassembling the containment structure and cleaning up sand from sandblasting. The drydock crew painted the hull with primer. The welders were working on steel repairs to the hull and rudder. One worker was cutting and fitting teak margin boards.

There was a meeting today with Anthony Carter, John Burns, Bay Ship & Yacht Co. Foreman Phil Lantz, NPS Ships' Manager Wayne Boykin, NPS Contract Officer Fred Sheppard, NPS Rigger Steve Hyman, NPS Safety Officer Tim Przygocki, and Bruce Vanvick of NPS all present. The meeting discussed lead abatement concerns and the latest scheduling estimates.

#### **FRIDAY, APRIL 3, 1998**

All day today there were four workers on board disassembling the containment structure and cleaning up sand from sandblasting. The drydock welding crew was working on steel repairs to the hull and the rudder.

#### **SATURDAY, APRIL 4, 1998**

All day today there was one welder working on steel repairs at the bowsprit. Four workers painted the hull with another coat of primer and a coat of black top coat. One welder was working on steel repairs at the stern and two workers were applying epoxy putty to areas above the waterline at the stern on the starboard side.

#### **SUNDAY, APRIL 5, 1998**

All day today there were five workers painting the hull with top coat. The bottom was painted with two coats of bottom paint.

#### **MONDAY, APRIL 6, 1998**

This morning there were six workers on board disassembling the sandblasting containment structure and cleaning up sand from sandblasting. The drydock painting crew continued painting the top coat on the hull, except when it rained. Welders worked on steel repairs at the stern and the bowsprit. Two workers were on board cutting and fitting teak margin boards at the forecastle.

#### **TUESDAY, APRIL 7, 1998**

All day today there were four workers on board disassembling the sandblasting containment structure and cleaning up sand from sandblasting. The welding crew were working on the steel repairs at the stern and the bowsprit. The drydock painting crew continued painting the top coat on the hull and the bowsprit. Two workers were on board cutting and fitting teak margin boards.

### **WEDNESDAY, APRIL 8, 1998**

All day today there were four workers cleaning up sand from sandblasting. Three workers were painting primer over steel repairs at the tween deck level. Welders worked on the hull and installing zincs. The painting crew painted the bowsprit and detailed the insets. Two workers were cutting and fitting teak margin boards.

Master Shipwright John Burns spoke with NPS Historian Steve Canright who agreed that some of the restored deck bolts could be trimmed to match the length of the new bolts. All the Association supplied teak stock was put on board the ship.

### **THURSDAY, APRIL 9, 1998**

All day today there were four workers cleaning up sand from sandblasting. Three workers and the foreman were cutting and fitting teak margin boards.

The ship was launched off the drydock back in the water this afternoon.

### **FRIDAY, APRIL 10, 1998**

All day today there were four workers cleaning up sand from sandblasting. Three workers and the foreman were cutting and fitting teak margin boards. Two workers were grinding rivet heads on the forward hatch. One welder was working on steel repairs to the bowsprit. Two workers were painting the fore mast.

This afternoon there was a progress meeting to discuss scheduling at the shipyard office with Bay Ship & Yacht Co. Contract Officer David Nussbaum, NPS Contract Officer Fred Sheppard, Project Manager Anthony Carter, Master Shipwright John Burns, Foreman Phil Lantz, and Job Monitor Andy Foster all present.

### **SATURDAY, APRIL 11, 1998**

All day today the foreman and two workers were cutting and fitting teak margin boards around the forward hatch. One worker was on the dock painting the fore mast.

### **MONDAY, APRIL 13, 1998**

All day today there were eight workers cutting and fitting deck planking around the forward hatch. Four riveters were riveting along the starboard side rail. Two workers were cleaning up sand from sandblasting.

### **TUESDAY, APRIL 14, 1998**

All day today there were eleven workers cutting and fitting deck planking around the forward hatch. There were three welders cutting out rivets under the port side rail and four riveters riveting the new steel section of the starboard side rail. There were five workers cleaning up sand from sandblasting at the tween deck level.

### **WEDNESDAY, APRIL 15, 1998**

This morning there were three workers on the dock milling and boring wood deck stock. One worker was painting the t'gallant mast. Three riveters were preparing to rivet at the new section of starboard side rail. Two welders and two workers were removing bad rivets along the port side rail. Two workers were grinding weld beads fair on deck beams. Seven workers were cutting and fitting deck planking around the forward hatch. Two workers were cleaning the tween deck level with solvent.

This morning Bay Ship & Yacht Co. hired an independent contractor to take wipe samples and test for lead concentrations.

This afternoon the rivet crew was riveting the deck beams. Two workers were cleaning up below decks and pumping out the bilges. One worker was fairing in weld beads with epoxy filler. Two workers swept the dock and shoveled sawdust.

### **THURSDAY, APRIL 16, 1998**

This morning there were four riveters and one welder preparing rivets for the port side bulwark rail. One welder and one worker were welding out bad rivets at the forecastle bulkhead where the starboard side lamp locker meets the hull plating. Two workers were on the dock cutting deck planking. Two workers were on the dock planing teak margin planks. Four workers were preparing areas around the tween deck level for painting. Nine workers were fitting and laying deck planking around the forward hatch.

At around 10:30am this morning there was a meeting at the dockside trailer to discuss lead abatement issues. Bay Ship & Yacht Co. Safety Officer Mike O'Neill, NPS Safety Officer Tim Przygocki, NPS Ships Manager Wayne Boykin, Master Shipwright John Burns and Job Monitor Andy Foster were all present. Mike O'Neill stated that there is not any lead contamination risk to workers on the ship at this time, but that there is pre-existing lead based paint on the ship, some of which is deteriorating and should be encapsulated. Mike O'Neill explained how Bay Ship & Yacht Co.'s lead testing, both ambient air samples and wipe samples, have all resulted in lead levels below the minimum action levels established by the U.S. Department of Housing and Urban Development for residential settings. Wayne Boykin and Mike O'Neill both stated that neither would pay for any more testing to be done until after most of the work is done on the ship. Wayne Boykin and Mike O'Neill both agreed that the final testing would be conducted on or around the 15<sup>th</sup> of May, just before the fumigation is scheduled to begin on May 20.

This afternoon there were four workers stripe coating areas at the tween deck with primer. This afternoon Master Shipwright John Burns rejected four fir deck planks that had been laid today because the bolt holes were drilled too close to the ends of the planks. The rejected planks were two 17 footers, one 12 footer and one 24 footer.

#### **FRIDAY, APRIL 17, 1998**

This morning there were two workers on the dock cutting deck planking. Eight workers were on the dock fitting and laying deck planking. Seven workers were at the tween deck preparing and stripe coating areas with primer. One worker was cleaning up sawdust below the forward hatch. Two workers were milling and cutting teak margin planks. Three riveters and one welder with fire watch were clearing rivet holes and riveting along the port side bulwark rail.

This afternoon there were five workers grinding, preparing and stripe coating with primer areas at the tween deck level.

#### **SATURDAY, APRIL 18, 1998**

All day today there were eight workers cutting and laying deck planking.

#### **MONDAY, APRIL 20, 1998**

This morning there were two workers on the dock cutting deck planking. Eight workers were fitting and laying deck planking. One welder was working on the starboard side lamp locker. One welder with fire watch was cutting out bad rivets along the port side bulwark rail. Three riveters were riveting the port side bulwark rail. Three workers were on the dock coating the inside of the foremast with Eureka Fluid Film.

This afternoon a crew of painters spray painted the tween deck level aft of the shelterdeck bulkhead with the second full coat of primer.

The shipwrights laying deck planking worked from 7am to 5:30pm today.

#### **TUESDAY, APRIL 21, 1998**

This morning there were two workers on the bowsprit pouring concrete. Three riveters were riveting the port side bulwark rail. One welder was cutting out bad rivets and adding new steel inserts along the port side bulwark rail. Two welders were working on steel repairs to the starboard side lamp locker. One worker was fairing in filler along the half round on top of the port side rail. One worker was on the dock stripe coating hardware on the foremast. A crew of painters was spray painting the tween deck level aft of the shelterdeck bulkhead. Two workers were on the dock cutting deck planking. Five workers were laying deck planking along the starboard side of the main deck and two more shipwrights arrived at around 10am. One worker was preparing the shore boat cradles for painting with a needle gun. One worker was stripe coating areas at the tween deck with primer. At around 10 am this morning, Master Shipwright John Burns delivered twenty kegs of twenty-five kilograms each of Jeffries' Number Two Marine Glue from the Haslett warehouse to the ship. Bay Ship & Yacht Co. has agreed to use the pitch provided by the National Park Service and to replace the amount used with the same product when it arrives at the shipyard from England. This afternoon two workers sanded the shore boats in preparation for painting. Five shipwrights laying deck planking worked from 7am to 4:30pm today.



### **WEDNESDAY, APRIL 22, 1998**

This morning there was one worker grinding rivet heads on the inside of the main hatch. Three riveters were riveting along the port side bulwark rail. One welder was cutting out bad rivets and welding in new steel inserts along the port side bulwark rail. Nine workers were laying deck planking on both the starboard and port sides of the main deck. Two workers were cutting deck planking on the dock. One worker was cleaning up sawdust around the main deck area. One worker was preparing and priming the shore boats. At around 10am this morning Master Shipwright John Burns delivered to the ship three 16'x4"x10" pieces of fir and two 18'x4"x10" pieces of fir from the NPS Shipwright Shop for use on the nib strakes.

This afternoon there were two workers stripe coating areas at the tween decks. One worker was grinding weld beads and fairing with putty along the deck beams. Two workers spray painted the tween deck along the port side from the shelterdeck bulkhead to the forecastle bulkhead. One worker painted the shore boat cradles and one worker spray painted the shore boats.

This afternoon Master Shipwright John Burns found deck planking already laid and bolted where sunlight could be seen through the seams from below. The shipwrights working on the deck told John Burns that they would re-bolt those planks after wedging each seam tighter.

Four of the shipwrights laying deck planking worked from 7am to 5:30pm today.

### **THURSDAY, APRIL 23, 1998**

This morning there were four riveters preparing the new rivet holes at the starboard side lamp locker. One worker was preparing interferences for paint with a needle gun. One worker was stripe coating new rivets with primer along the after end of the starboard side bulwark rail. One worker was preparing new rivets for paint along the port side bulwark rail. One worker was grinding weld beads on the port side bulwark rail. Two workers were on the dock cutting deck planks. Three worker were stripe coating areas on deck beams at the tween deck. One worker was glazing areas on the inside of the main hatch. Seven workers were laying deck planking around the main deck.

At around 8am this morning, Ships Manager Wayne Boykin and NPS Safety Officer Tim Przygocki arrived with two lead level testers and took wipe samples around the ship.

This afternoon there were two workers cleaning the workshop forward in the tween deck. One welder was cutting holes in the new steel deck plate for the manhole cover.

Five shipwrights laying deck planks worked from 7am to 5:30pm today.

#### **FRIDAY, APRIL 24, 1998**

This morning there were four riveters riveting the starboard side lamp locker. One worker was preparing interferences for painting. One worker was glazing areas inside the forward hatch. Eight workers were laying deck planks on the port side of the midship house. Two workers were cleaning the workshop forward in the tween deck. Two workers were stripe coating areas on the deck beams at the tween deck. One welder was working on above the waterline hull repairs on the port side. Two workers were glazing the half round on top of the shell plating around the poop deck.

Around 8am this morning the crane started loading the shore boats on the ship.

This afternoon one worker painted new rivets along the port side shell plating. Two workers and a rigger fastened the new chains to the bowsprit.

#### **SATURDAY, APRIL 25, 1998**

This morning there were six workers laying deck planks along the port side of the midship house. Two workers were on the dock cutting deck plank stock. Three workers were cleaning up sawdust around the tween deck. Two workers were cleaning and painting the new steel foremast collar at the tween deck.

This afternoon six workers cleaned up sawdust around the main deck area for the last hour of the shift.

#### **MONDAY, APRIL 27, 1998**

This morning there were eight workers laying deck planks along the port side of the main deck. Three riveters and one welder were riveting the starboard side lamp locker. Two workers were fairing in glazing along the port side bulwark rail and the half round on top of the shell plating around the poop deck.

At around 10:30am this morning the crane crew lifted the foremast back on the ship. The foremast was secured by shipyard workers and the NPS riggers. Two rigger work platforms were lifted onto the deck around the foremast.

This afternoon two workers were stripe coating areas at the hatches and the port side bulwark rail.

Five shipwrights laying deck planks worked from 7am to 5:30pm today.

#### **TUESDAY, APRIL 28, 1998**

This morning there were three riveters riveting the starboard side lamp locker. Three workers were cleaning up sawdust around the main deck. One worker was stripe coating areas at the tween deck. Seven workers were laying deck planks, fairing and sanding the deck. One worker was glazing along the half round on top of the shell plating around the fore deck. Two welders with fire watch worked on above the waterline hull repairs on the port side near the stern.

This afternoon two workers sanded and painted the half round on top of the shell plating around the poop deck. One worker painted over repairs at the hull plating along the port side. One worker faired in the paint around the row of new rivets along the port side hull plating. Three riveters prepared the rivet holes along the half round on top of the main deck rail on the starboard side.

Five shipwrights laying deck planking worked from 7am to 5:30pm today.

### **WEDNESDAY, APRIL 29, 1998**

This morning there were three riveters riveting a section of half round along the top of the starboard side rail. Eight workers were laying deck planks around the main mast and along the starboard side of the midship house. Two workers were stripe coating areas with primer along the port side bulwark rail. Two workers were cleaning up sawdust around the main deck area. Two workers were on the dock cutting deck planking. This afternoon there were two workers applying epoxy putty repairs to areas along the starboard side hull plating. One welder was working on above the waterline hull repairs at the stern on the port side. One worker was grinding rivet heads flush on the forward hatch combings.

Five shipwrights laying deck planking worked from 7am to 4:30pm today.

### **THURSDAY, APRIL 30, 1998**

This morning five caulkers started to caulk the seams at the shelterdeck bulkhead on the starboard side. One worker prepared the main deck bitts with a needle gun. One worker was on the dock drilling out teak plugs. One worker was applying epoxy putty over steel repairs to the hull plating at the port side at the stern. Six workers were laying deck planks and fairing the deck. One worker was stripe coating the half round on top of the shell plating around the poop deck. One worker was threading deck bolts with cotton. One worker was cleaning up bedding compound from the underside of the main deck. Two workers were reassembling the deck of the workshop forward at the tween deck. This afternoon there were two workers painting areas along the starboard side of the hull. One worker was painting yellow trim along the half round at the port side of the hull. Two caulkers poured hot pitch over the seams they caulked today. Two shipwrights laying deck planks worked from 7am to 4:30pm today.

### **FRIDAY, MAY 1, 1998**

All day today there were six workers laying deck planks and fairing the deck. Two workers were on the dock cutting deck planking. Two workers were cleaning up sawdust.

### **SATURDAY, MAY 2, 1998**

All day today there were seven workers laying deck planks and fairing the deck. Two caulkers caulked the deck seams along the starboard side of the main hatch.

### **MONDAY, MAY 4, 1998**

This morning there were two workers building a plastic weather containment tent over the starboard side of the main deck. Two workers were cutting deck planks on the dock.

Two workers were fixing the electrical conduits at the tween deck. One worker was scraping excess pitch off the deck at the starboard side of the mainmast. Two workers were cleaning and masking off the forepeak. One worker was preparing steel with a needle gun at the starboard side lamp locker. Six workers were laying deck planks along the port side of the main deck. Seven caulkers were caulking the deck seams at the starboard side of the midship house. Two workers were cleaning up bedding compound at the tween deck. One worker was grinding rivet heads at the forward hatch.

This afternoon the crane crew lifted two rigger work platforms off the main deck to allow for deck workers to complete the deck around the foremast.

This afternoon there were two workers painting the bowsprit chains. Two workers were painting over steel repairs at the hull plating on the port side. The caulkers poured hot pitch over the seams they caulked today.

Five shipwrights laying deck planks worked from 7am to 5:30pm today.

### **TUESDAY, MAY 5, 1998**

This morning there were seven workers laying deck planks along the port side of the main deck. Two workers were on the dock cutting deck planks. Two workers were planing and fairing the deck. Two workers were preparing areas in the forepeak with needle guns. Two workers were cleaning up sawdust around the main deck area. Six caulkers were caulking the deck seams along the starboard side of the midship house. One worker was grinding rivet heads fair inside the forward hatch. One worker was repairing electrical conduits at the tween deck. One worker was cleaning up bedding compound at the tween deck. Two workers were painting over areas of steel repair on the hull at the port side. All work stopped for the day just after 1pm this afternoon due to a sudden, intense rainstorm.

### **WEDNESDAY, MAY 6, 1998**

This morning there were six workers laying deck planking along the port side of the main deck. Two workers were cleaning up sawdust around the main deck area. One worker was building a plastic weather containment structure over the port side of the main deck. Two workers were on the dock cutting deck planks. One worker was grinding fair rivet heads on the inside of the main hatch. One worker was fairing the inside of the forward hatch with a soft pad sander. One worker was preparing areas in the forecastle with a needle gun. Five caulkers were re-caulking the seams that were spoiled by the deluge yesterday afternoon.

Master Shipwright John Burns told Foreman Phil Lantz this morning that the deck planks that land ½ inch high on the outer margin plate on the port side of the main deck need to be planed down off the bottom before they are bolted to make them fair with the rest of the field.

This afternoon one worker was preparing stanchions at the tween deck with a needle gun. One worker was stripe coating the forward hatch combings with primer.

Three shipwrights laying deck planks worked from 7am to 4:30pm today.



#### **THURSDAY, MAY 7, 1998**

This morning there were seven caulkers caulking deck seams at the starboard side of the foremast. Eight workers were laying deck planking along the port side of the main deck. Two workers were on the dock cutting deck planks. One worker was cleaning up sawdust on deck. One worker was stripe coating the inside of the main hatch with primer. One worker was filling voids between the steel deck beams and the deck planking with bedding compound. One worker was preparing areas in the forecastle with a needle gun. One worker was scraping excess pitch off the deck at the starboard side of the midship house. One worker was grinding fair steel repairs at the port side hull plating.

At around 10:30am this morning NPS Ships Manager Wayne Boykin and NPS Safety Officer Tim Przygocki gave a tour of the ship to the NPS Regional Safety Officer along with Bay Ship & Yacht Co. Safety Officer Mike O'Neill and NPS Rigger Foreman Steve Hyman. The NPS Regional Safety Officer was satisfied that Bay Ship & Yacht Co. was doing everything they should be doing to clean up all blast grit and dust from sandblasting operations.

This afternoon there was one worker glazing the forward hatch combing. One worker was preparing with a needle gun the underside of the steel deck plate below the flywheel pumps for painting.

Three shipwrights laying deck planking worked from 7am to 4:30pm today.

#### **FRIDAY, MAY 8, 1998**

This morning there were seven caulkers caulking the deck seams around the foremast. One worker was fairing in glazing with a soft pad sander inside the main hatch. One worker was painting stanchions at the tween deck with primer. One worker was repairing electrical conduits at the tween deck. Two workers were preparing areas with needle guns in the midship house for painting. Six workers were laying deck planks along the port side of the main deck. One worker was fairing and painting over steel repairs along the port side of the hull plating.

At around 10am this morning there was a scheduling meeting at the office of Bay Ship & Yacht Co.

This afternoon there was one worker painting over new rivets along the port side shell plating. Both rigger work platforms were lifted back onto the main deck this afternoon. Five caulkers and three shipwrights laying deck planking worked from 7am to 5:30pm today.

#### **SATURDAY, MAY 9, 1998**

This morning there were two workers scraping off excess pitch along the starboard side of the main deck. Five caulkers were caulking the deck seams around the forward hatch. Six workers were laying deck planks at the port side of the main deck and around the main mast. Two workers were fairing and sanding the deck. One worker was cleaning up sawdust around the main deck.

This afternoon there were four workers planing and sanding the port side of the main deck. Two workers cleaned up and organized the equipment and materials on the dock. Five shipwrights laying deck planking and five caulkers worked from 7am to 4:30pm today.

### **MONDAY, MAY 11, 1998**

This morning there were two workers repairing the plastic weather containment structure over the main deck. Seven caulkers were caulking the deck seams on the port side of the foremast. Three workers were cleaning up excess bedding compound from underneath the main deck planking. Four workers were fitting and laying deck planks around the main mast. One worker was fitting and bedding the main deck bitts. Two workers were preparing areas in the forecastle for painting.

This afternoon there were two workers stripe coating areas at the tween deck with primer. One worker was cleaning up excess bedding compound from underneath the deck planks. One worker was filling voids between deck planks and steel deck beams with bedding compound.

### **TUESDAY, MAY 12, 1998**

All day today there were two workers bedding and fastening the main deck bitts forward. One worker was filling voids with bedding compound. Two workers were stripe coating with primer areas on the overhead deck beams at the tween deck. One worker was cleaning up excess bedding compound from the deck beams. One worker was cleaning up sawdust around the main deck. Two workers were repairing the plastic weather containment structure over the main deck. Three workers were fitting and bolting the last deck planks around the main mast. Two workers were fairing and sanding deck planks. Six caulkers were caulking deck seams on the port side at the forecastle bulkhead. One worker was scraping excess pitch off the main deck. One worker was masking off areas at the tween deck in preparation for painting. One welder was working on steel repairs around the hawseholes in the forecastle.

### **WEDNESDAY, MAY 13, 1998**

This morning there were one worker sanding and one worker fairing the main deck. Two workers were cleaning up sawdust and repairing the weather containment structure. Two workers were preparing and painting interferences with primer. Two workers were re-bedding a margin plank on the port side of the midship house. Four workers were fitting and bedding interferences. Four workers were masking off the tween deck in preparation for painting the deck beams. Six caulkers were caulking the deck seams along the port side of the midship house.

This afternoon there were four workers spray painting the deck beams at the tween deck with primer.

NPS Historian Steve Canright came by the ship this afternoon and met with Master Shipwright John Burns. Steve Canright approved of the proposed use of teak mounting aprons around the base of the ventilator, the flywheel pumps and the manhole. Steve Canright also approved of the repairs done to restore the tonnage and documentation numbers in the main hatch and of the use of double nuts instead of washers on deck bolts that required spacers.

#### **THURSDAY, MAY 14, 1998**

This morning there were six caulkers caulking deck seams along the port side of the main mast. One worker was cleaning up sawdust around the main deck. Two workers were painting the new steel waterways. Five workers were fitting and bedding interferences. Four workers stripe coating areas on the deck beams with primer. One worker was painting the main deck bitts with primer.

This afternoon there were two workers preparing areas in the forecastle with metal primer. One worker was glazing areas around the exterior of the main hatch.

#### **FRIDAY, MAY 15, 1998**

This morning there were four workers preparing to paint the deck beams and the underside of the deck planking with topcoat. Four workers and a cement truck crew were pumping cement into the main deck waterways. Three workers were cleaning up sawdust and repairing the plastic weather containment structure. Two workers were scraping excess pitch off the main deck. Six caulkers were caulking the deck seams around the main mast and along the port side of the main deck. Two workers were fitting and bedding interferences around the foremast.

There was a scheduling meeting held at the office of Bay Ship & Yacht Co. at around 10am this morning.

This afternoon one worker painted the main hatch and one worker painted stanchions at the tween deck.

#### **SATURDAY, MAY 16, 1998**

This morning there were six caulkers caulking the deck seams along the port side of the main deck near the gangway. One worker was watering the cement in the main deck waterways and cleaning up around the main deck.

This afternoon there was one worker fitting and bedding teak mounting aprons for the base of the flywheel pumps and the manhole.

#### **MONDAY, MAY 18, 1998**

This morning there were five caulkers caulking the deck seams around the main mast. Two workers were preparing areas at the tween deck for trim painting. Two workers were glazing areas around the midship house and the forecastle. Two plumbers were repairing the main deck fresh water main. One worker was painting the forward hatch. One worker was fitting and bolting interferences. One welder was repairing a cracked weld in the forecastle. One worker was fitting a teak mounting apron around the ventilator base. One worker was stripe coating areas at the tween deck. Five workers were scraping and cleaning the bilges.

The riggers started to lift the t'gallant mast onto the ship this morning.

This afternoon there were two workers painting out the trim on the main hatch. One worker was filling voids with bedding compound between the deck planks and the steel deck beams.

### **TUESDAY, MAY 19, 1998**

This morning there were five workers scraping and cleaning the bilges and coating the bilges with Eureka Fluid Film. One worker was fitting a teak mounting apron around the base of the ventilator. One caulker was caulking the last open seams around the starboard side of the main hatch. Four workers were mounting and bedding interferences. One worker was painting trim on the main hatch. One worker was filling voids with bedding compound between deck planks and steel deck beams. Three workers were cleaning up cement around the waterways.

The crane arrived at 7am to lift the yards into place on the foremast. The three lower yards were hung on the foremast today.

NPS Historian Steve Canright decided today to leave the steel deck beams painted white rather than have them painted an off white to match the deck beams below the shelterdeck.

This afternoon there were two workers installing the grated covers over the main hatch. Two workers were glazing along the starboard side hull plating.

### **WEDNESDAY, MAY 20, 1998**

This morning there were two workers pressure washing the main deck bulwark rails. One worker was painting the forward hatch. One worker was fitting and bedding interferences. Two workers were removing plastic from the tween deck. One worker was preparing areas in the forecastle for painting. Two workers were bedding and mounting main deck ladders.

This afternoon the riggers received new seizing wire.

Master Shipwright John Burns presented Foreman Phil Lantz with the final punch list of remaining work items this morning.

This afternoon there were six workers cleaning and removing plastic containment from the tween deck area. The fumigation crew began to seal off the lower decks in plastic sheeting. One worker was painting the port side bulwark rail. One worker was sanding down teak deck plugs. One worker was laying cement in the forecastle waterway forward. One worker was spray painting areas in the forecastle with primer.

### **THURSDAY, MAY 21, 1998**

This morning there were three workers sweeping the main deck and cleaning the cement waterways. Three workers were pumping Eureka Fluid Film into the bilges. Three workers were bedding and mounting interferences. Three workers were sanding the main deck bulwarks in preparation for painting. Three workers were moving tools and toolboxes off the ship. One worker was sanding the cement waterways. Two workers were painting the bulwarks.

At around 10am this morning the fumigation crew resumed sealing off below decks with plastic sheeting. This afternoon there was one worker painting out the trim around the midship house. The fumigation crew smoke tested the containment after 3:30pm this afternoon and began pumping fumigant gas this evening.



**FRIDAY, MAY 22, 1998**

All day today the fumigation crew pumped fumigant throughout the lower decks of the ship.

**SATURDAY, MAY 23, 1998**

All day today the fumigation crew pumped fumigant throughout the lower decks of the ship.

**SUNDAY, MAY 24, 1998**

All day today the fumigation crew pumped fumigant throughout the lower decks of the ship.

**MONDAY, MAY 25, 1998**

All day today the fumigation crew ventilated the ship.

**TUESDAY, MAY 26, 1998**

The fumigation crew ventilated the ship until around 10am this morning when they approved the ship for workers to board.

The rest of the day there were four workers and the foreman on board cleaning and painting out the trim around the main deck.

**WEDNESDAY, MAY 27, 1998**

This morning there were two workers arranging the tool boxes in the tween deck workshop forward. One worker was stripe coating areas around the tween deck. One worker was painting the wooden structure around the flywheel pumps. Two workers were cleaning the shelterdeck cabins. Three workers were cleaning off the masking from over the main deck portholes. One worker was cleaning up overspray off the ladder handrails. Two workers were spray painting the forecastle with top coat. Two workers were cleaning up on the dock. One worker was chipping paint at the Chinese cannery workers bunk room.

This afternoon there was one electrician repairing the track lighting conduits at the tween deck. One worker coated the bulwark at the tween deck around the Chinese bunk room with metal primer.

**THURSDAY, MAY 28, 1998**

This morning there were three workers painting trim at the tween deck. One worker was fitting and cutting floorboard repairs at the Chinese bunk room. One worker was cleaning historical artifact displays at the tween deck. One worker was painting the bilge pump outlet at the lower hold. Three workers were cleaning exhibits at the shelterdeck. Two workers were cleaning up masking from the forecastle.

This afternoon there were two workers painting out trim at forecastle. One electrician was repairing electrical conduits at tween deck workshop. One worker painted the Chinese bunk room with primer.

#### **FRIDAY, MAY 29, 1998**

All day today there were four workers scraping excess pitch off the main deck forward. Two workers were glazing were cleaning up trim around the main deck. One worker was sharpening scraper blades. Three workers were cleaning the tween deck workshop. One electrician was repairing the flourescent lights at the tween deck workshop.

There was a scheduling meeting at around 10am this morning. All present were NPS Ships Manager Wayne Boykin, NPS Contract Officer Fred Sheppard, BS&Y Production Coordinator Phil Lantz, BS&Y Contract Officer David Nussbaum, Project Manager Anthony Carter, Master Shipwright John Burns and Job Monitor Andy Foster.

At around 1pm this afternoon, lead wipe samples were taken around the ship by a private contractor hired by the NPS. All present for the lead wipe samples were Ralph Guzman of Health Science Associates, NPS Contract Officer Fred Sheppard, BS&Y Safety Officer Mike O'Neill, Master Shipwright John Burns, NPS rigger foreman Steve Hyman and lead rigger Chris Janinni.

#### **MONDAY, JUNE 1, 1998**

This morning there were six workers scraping off excess pitch from the main deck. One worker was sharpening scraper blades. One worker was glazing along the main deck bulwark rail. One worker was painting trim along the shelterdeck bulkhead. One worker was painting trim along the port side bulwark rail.

This afternoon one welder repaired the brass rail around the main hatch stairway cutaway. Four workers bleached areas of the main deck that had been scraped.

#### **TUESDAY, JUNE 2, 1998**

This morning there was one worker re-bedding interference ringbolts that leaked. One worker was glazing around the forward hatch. Seven workers were scraping the main deck. Three workers were painting out trim around the forecastle. One worker was sharpening scraper blades. One worker was grinding down high spots in the port side cement waterway. One worker was painting areas on the bowsprit. One worker was adding hot pitch over low spots along the deck seams.

This afternoon there were three workers painting areas on the midship house.

#### **WEDNESDAY, JUNE 3, 1998**

This morning there was one worker pressure washing the flaking paint on the main deck bulwark rails. Five workers were scraping excess pitch off the deck. Two workers were re-bedding interference ringbolts. Three workers were cleaning at the tween deck. Four workers were painting the main deck bulwark rails.

The riggers hung the fourth yard from the foremast.

This afternoon there was one worker painting areas on the hull plating. One worker was painting areas on the bowsprit. One worker was adding hot pitch over the low spots around the main deck. The foreman stayed late this afternoon and applied a borate wood preservative solution to the main deck.

**THURSDAY, JUNE 4, 1998**

All day today there were four workers painting the main deck bulwarks. Two workers were building scaffolding around the bow in preparation for fastening the new brass letters. One worker was re-bedding interference ringbolts. Three workers were cleaning up in the lower hold. Two workers were cleaning up around the tween deck workshop area. One worker was tying down the main hatch awning. One worker was repainting the main mast waistcoat. This afternoon two workers applied a borate wood preservative solution to the main deck.

**FRIDAY, JUNE 5, 1998**

This morning there were two workers scraping the main deck. One worker was re-bedding interference ringbolts. One worker was adding deck bolts to plank butts where the installed deck bolt missed the lap joint. One worker was bleaching the main deck. This afternoon there was one worker varnishing the main deck bulwark pinrails and the main deck ladders. One workers was fastening the new brass letters to the bow. Two workers oiled the main deck this afternoon with a combination of linseed oil and turpentine.

**SATURDAY, JUNE 6, 1998**

Two workers applied another coat of oil on the main deck this morning.

**MONDAY, JUNE 8, 1998**

All day today there were two workers preparing the bow for fastening the new teak letters. Two workers were cleaning around the main deck. Two workers were grinding down the high spots on the cement waterways.

**THE NATIONAL MARITIME MUSEUM ASSOCIATION**  
**Balclutha Deck Renewal Project**

**APPENDIX**

**INVENTORY OF MATERIALS USED**

The following list is an inventory of materials used for the 1997-98 Balclutha Deck Renewal Project.

**FASTENERS**

1500 newly forged cheese head deck bolts.

Over 1200 reconditioned and regalvanized original cheese head deck bolts.

Over 2800 new square head nuts.

**PITCH**

14 kegs of 25 kilograms each of Jeffries #2 Marine Glue.

**BEDDING COMPOUND**

55 gallons of Eureka Fluid Film, Gel Compound B.

**DOUGLAS FIR DECK PLANKING**

total amounts;

16,383 board feet of 4"x4"

640 board feet of 4"x6"

individual amounts;

(29) 12 footers

(81) 13 footers

(75) 16 footers

(116) 17 footers

(5) 18 footers

(234) 20 footers

(1) 21 footer

(22) 24 footers

(9) 26 footers

(3) 16'x4"x10"

(2) 18'x4"x10"





## INVENTORY OF MATERIALS USED

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### TEAK MARGIN PLANKING

total amounts;

1028 board feet of 4" thick teak.

(26) 8'x4"x12"

(2)13'x4"x12"

(2) 9'x4"x12"

(4)14'x4"x12"

(2) 12'x4"x12"

(2)12'x4"x13"

14'x4"x14"

13'x4"x14"

13'x4"x13"

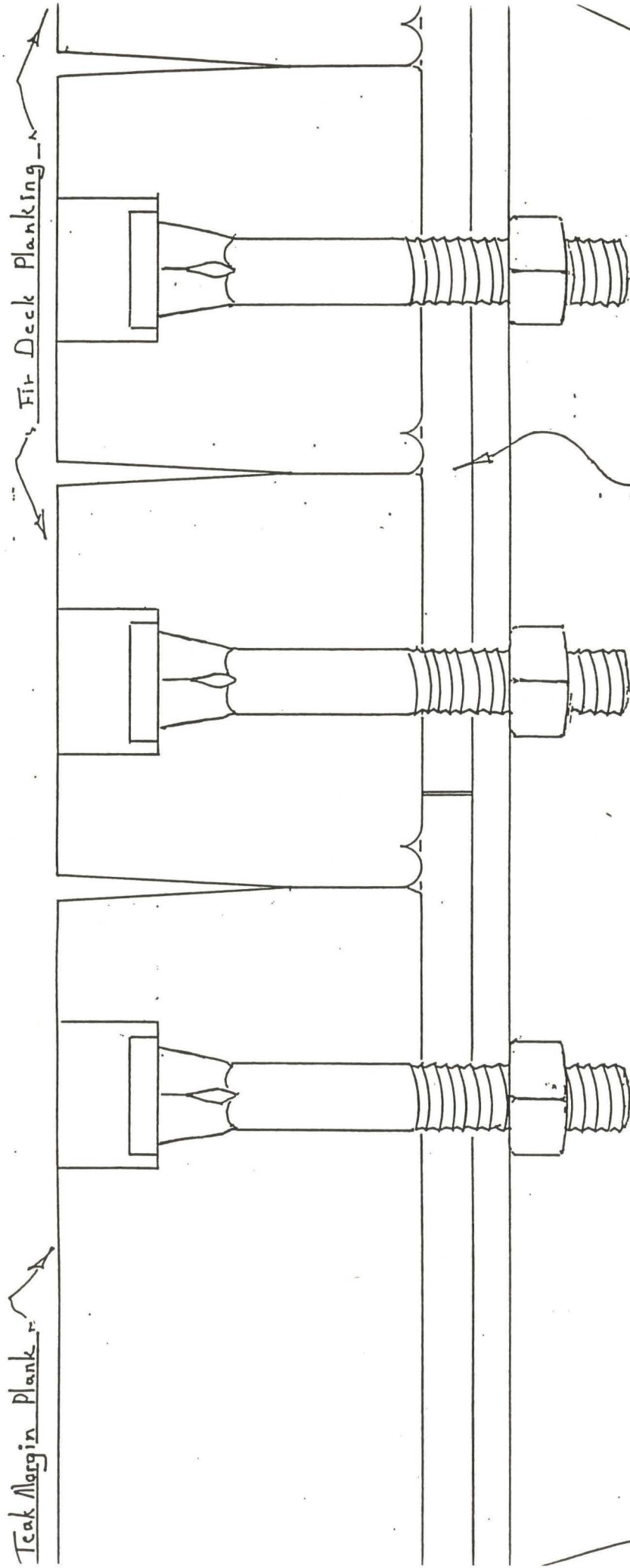
13'x4"x12"

13'x4"x17"

12'x4"x11"



# \* Teak Margin and Deck Plank Layout at Standard 4" Width



Yellow Cedar  
Fairing strips laid across  
uneven surfaces to help  
level deck planking

Deck Beam Below Decking







